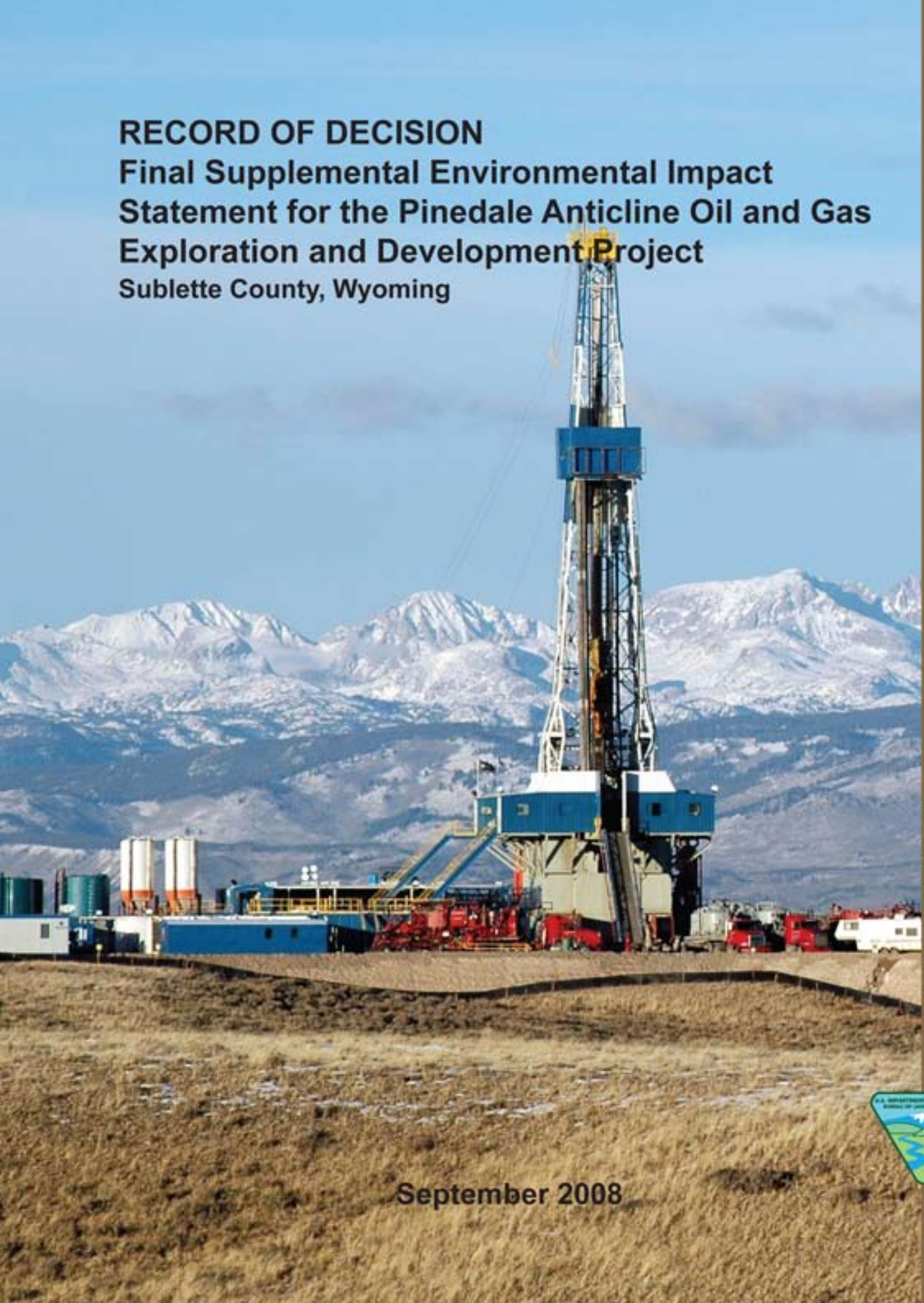
RECORD OF DECISION
Final Supplemental Environmental Impact Statement for the Pinedale Anticline Oil and Gas Exploration and Development Project
Sublette County, Wyoming



BLM

Pinedale Field Office

September 2008

MISSION STATEMENT

It is the mission of the Bureau of Land Managment to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/WY/PL-08/029+1310

RECORD OF DECISION

FOR THE

SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

PINEDALE ANTICLINE OIL AND GAS EXPLORATION AND DEVELOPMENT PROJECT

U.S. Department of the Interior

Bureau of Land Management

Cheyenne, Wyoming

Sept 12, 2008

C. Stephen Allred — Date

Assistant Secretary

Land and Minerals Management

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Abbreviations and Acronyms

AO	Authorized Officer
APD	Application for Permit to Drill
AQD	Air Quality Division
Anschutz	Anschutz Pinedale Corporation
BACT	best available control technology
BCC	Bird Canyon Corridor
BFGC	Blacks Fork Granger Corridor
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	best management practices
BP	BP America Production Company
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations

CGF	central gathering facility
COA	Conditions of Approval
COE	U.S. Army Corps of Engineers
DA	development area
dBA	decibel on the A-weighted scale
DOI	Department of the Interior
dv	deciview
EA	environmental assessment
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
ERRP	Erosion, Revegetation and Restoration Plan
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
ID Team	BLM Interdisciplinary Team
IM	internal memorandum
JGGC	Jonah Gas Gathering Company
JIO	Jonah Interagency Mitigation and Reclamation Office
JIDPA	Jonah Infill Drilling Project Area
LOP	life-of-project
MA	management area
MBTA	Migratory Bird Treaty Act
MCL	maximum concentration level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
Newfield	Newfield Exploration Company
NHPA	National Historic Preservation Act
NO_x	nitrogen oxide
NOI	Notice of Intent
NPDES	National Pollution Discharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places
NSO	no surface occupancy
OPC	Opal Pioneer Corridor
ORV	off-road vehicle
PA	programmatic agreement
PAPA	Pinedale Anticline Project Area
PAPO	Pinedale Anticline Project Office
PAWG	Pinedale Anticline Working Group
PBC	Paradise Bird Canyon
PDA	potential development area
QGM	Questar Gas Management
Questar	Questar Market Resources
RCRA	Resource Conservation and Recovery Act
RGS	Rendezvous Gas Services
RIP	Recovery and Implementation Program
RMP	Resource Management Plan
ROD	Record of Decision
ROW	right-of-way
RVII	Rendezvous Phase VII
SEIS	supplemental environmental impact statement
Shell	Shell Exploration & Production Company
SHPO	State Historic Preservation Office
SPCC	Spill Prevention Control and Countermeasure Plan
SRMA	Special Recreation Management Area
SSPS	special status plant species
Stone	Stone Energy Corporation

TDS	total dissolved solids
TUP	temporary use permit
Ultra	Ultra Resources, Inc.
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
VOCs	volatile organic compounds
VRM	visual resource management
WAAQS	Wyoming Ambient Air Quality Standards
WDA	Wyoming Department of Agriculture
WDEQ	Wyoming Department of Environmental Quality
WGFD	Wyoming Game and Fish Department
WLCI	Wyoming Landscape Conservation Initiative
WO	Washington Office
WOGCC	Wyoming Oil and Gas Conservation Commission
WQD	Water Quality Division
Yates	Yates Petroleum Corporation

Record of Decision
for the
Supplemental Environmental Impact Statement
for the Pinedale Anticline
Oil and Gas Exploration and Development Project
Sublette County, Wyoming

1.0 SUMMARY

This Record of Decision (ROD) documents the Department of Interior's (DOI) decision for the Supplemental Environmental Impact Statement (SEIS) for the Pinedale Anticline Oil and Gas Exploration and Development Project Area, (hereafter referred to as the *PAPA or Pinedale Anticline Project Area)* in Sublette County, Wyoming. The Final SEIS analyzes various options for oil and gas recovery within the PAPA. This ROD emphasizes concentrating development, allowing for systematic development, performance based outcomes and adaptive management for reducing impacts, and cooperative monitoring with the State of Wyoming.

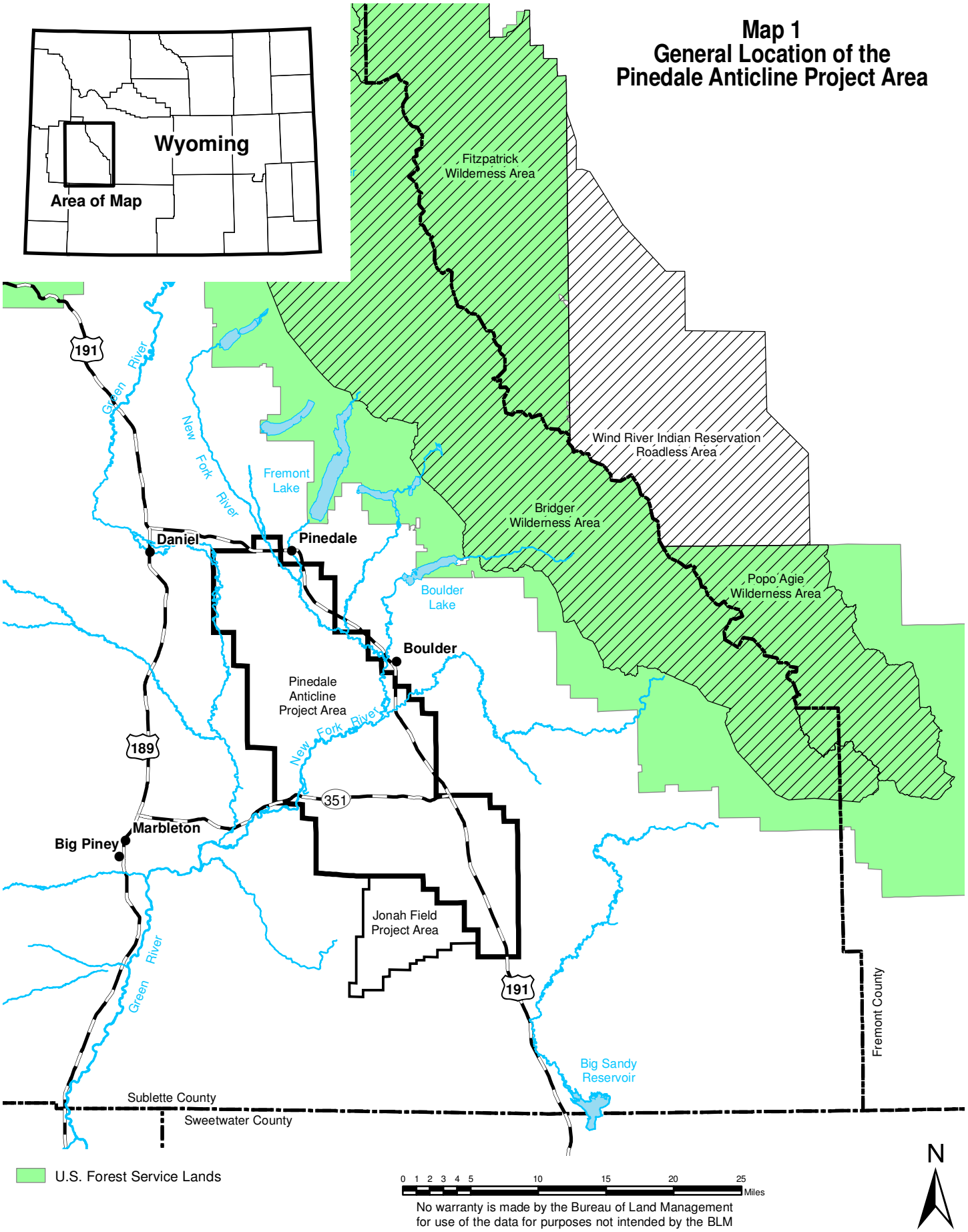
The Bureau of Land Management (BLM) will manage the federal surface and mineral estate in the PAPA as directed in this ROD. The PAPA comprises approximately 198,037 acres of federal, state, and private land. Of this total, approximately 158,415 surface acres (80 percent) are administered by the BLM; 9,800 surface acres (5 percent) are owned by the State of Wyoming; and 29,822 acres (15 percent) are privately owned. The location of the PAPA is shown on Map 1 and the current leases by leaseholder are shown on Map 2.

This ROD supersedes in its entirety the PAPA ROD of July 27, 2000 and subsequent decisions. This ROD authorizes the BLM Authorized Officer (AO) to process Applications for Permits to Drill (APDs), Sundry Notices, Rights-of-Way (ROWs), and Temporary Use Permits (TUPs) on public lands administered by the BLM for the Pinedale Anticline Project and establishes the conditions by which such authorizations and exceptions to seasonal restrictions will be granted with Conditions of Approval (COAs) or stipulations. This ROD also authorizes the establishment of a pipeline corridor and two pipelines within the Pinedale, Rock Springs, and Kemmerer field office planning areas.

Requirements for specific Operators are present in this ROD. Where individual Operators are not named, the requirement pertains to all Operators conducting oil and gas development activities in the PAPA. Where specific Operators are named, such as Anschutz Pinedale Corporation (Anschutz), Ultra Resources, Inc. (Ultra), Shell Exploration & Production Company (Shell), and Questar Market Resources including Wexpro Company (Questar), the requirements in this ROD will apply to any successors and assigns.

This ROD recognizes the PAPA contains a significant energy reserve as well as important sensitive and valued resources within or adjacent to the area which require protection from unnecessary or undue degradation (Federal Land Policy and Management Act - FLPMA, Section 302).

Map 1
General Location of the Pinedale Anticline Project Area



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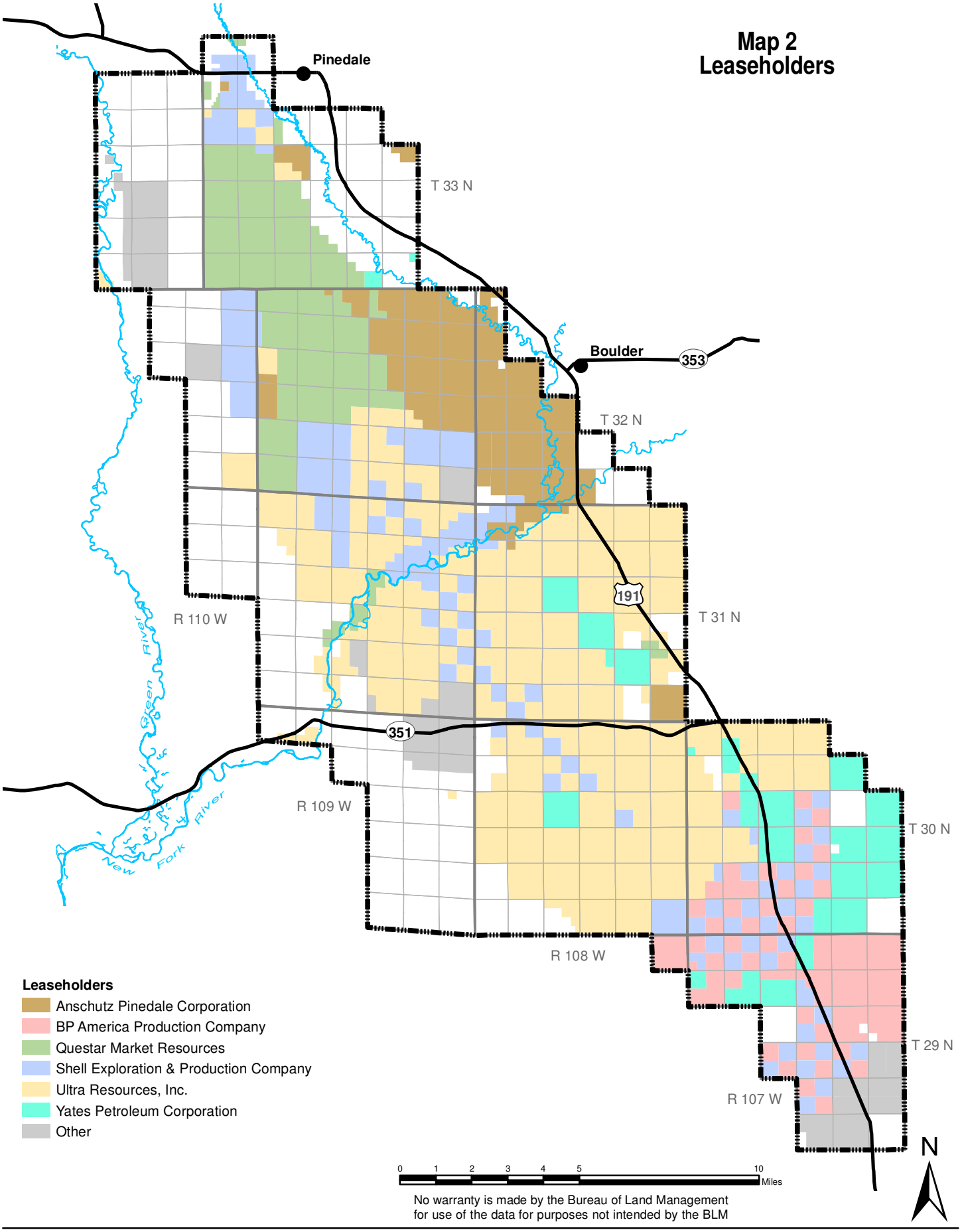
Map 2
Leaseholders
Pinedale
Boulder
353
191
351
T 33 N
T 32 N
T 31 N
T 30 N
T 29 N
R 110 W
R 109 W
R 108 W
R 107 W
Green River
New Fork River
Leaseholders
Anschutz Pinedale Corporation
BP America Production Company
Questar Market Resources
Shell Exploration & Production Company
Ultra Resources, Inc.
Yates Petroleum Corporation
Other
0 1 2 3 4 5 10
Miles
N
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2.0 DECISION

BLM approves development of the oil and gas resources within the PAPA as outlined in Alternative D of the Final SEIS as modified in this ROD. Analysis of 4,399 wells from no more than 600 well pads was completed in the SEIS and development may proceed in accordance with this ROD so long as impacts do not exceed those analyzed in Alternative D as modified in this ROD.

Construction of new well pads, expansion of existing well pads, and construction of new roads and pipelines is anticipated to take place through 2023. Well drilling is expected to continue through 2025. It is estimated that wells will have a 40 year production life continuing through 2065. Application of measures listed in BLM's Practices and Restrictions for the Pinedale Anticline Project Area (Appendix A) can be imposed by the BLM on a case-by-case basis to mitigate impacts.

2.1 RELIEF FROM SEASONAL RESTRICTIONS

This ROD allows for year-round development and delineation activity within big game (pronghorn and mule deer) and greater sage-grouse seasonal use areas by granting exceptions to the big game and greater sage-grouse seasonal restrictions. The extent, location, and duration of relief from seasonal habitat restrictions will be determined at the annual planning meeting. No surface occupancy (NSO) restrictions for all species will remain in effect.

2.2 CONCENTRATED DEVELOPMENT

Using a long-term plan referred to as "Concentrated Development," an estimated 25 trillion cubic feet of natural gas will be recovered with no more than 600 well pads on all lands in the PAPA. Concentrated Development is described in detail below and will be reviewed annually. Further, concentration of development will be achieved through BLM leasing decisions as described below.

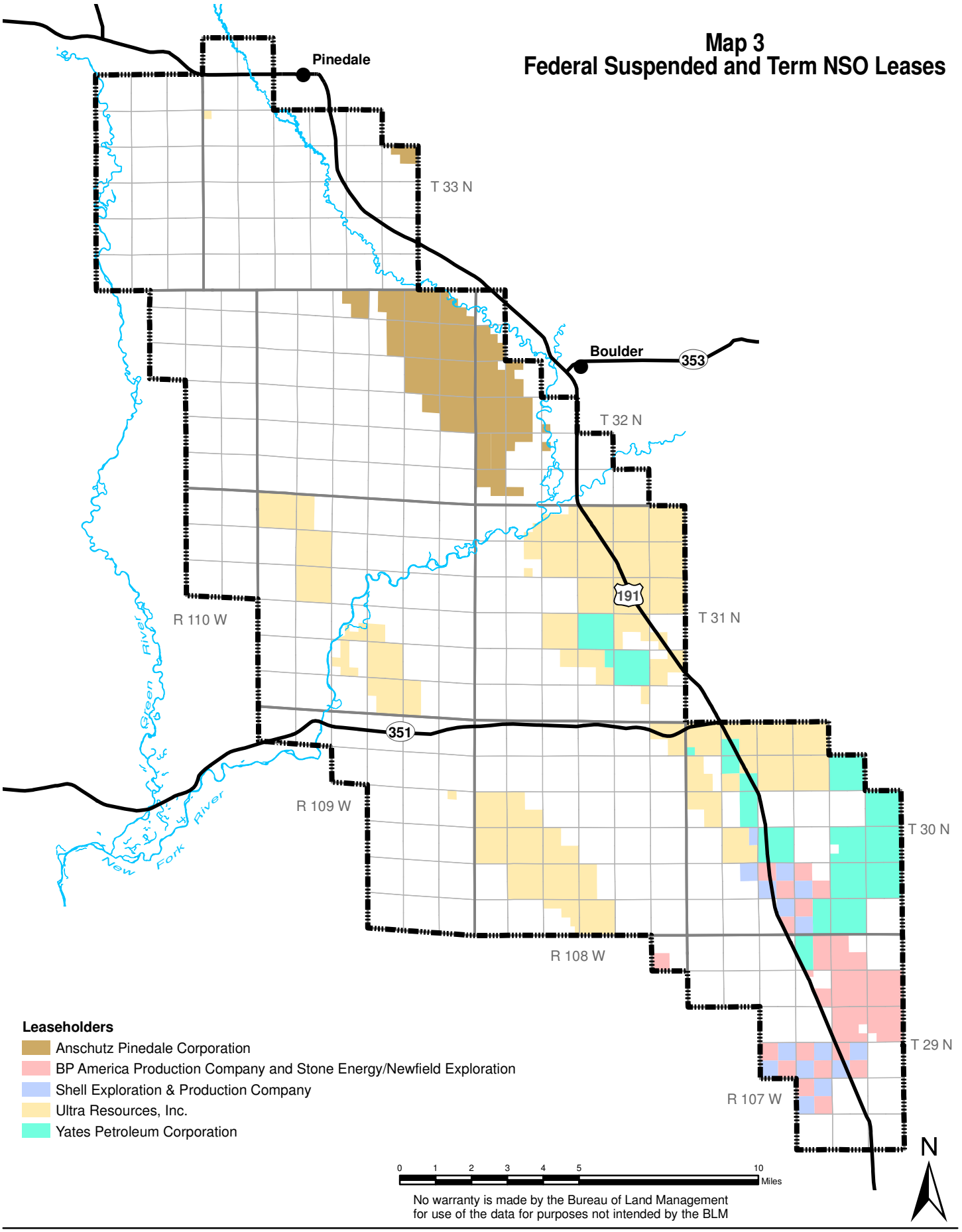
2.3 LEASING DECISIONS

The Wyoming State Director has placed a moratorium on federal mineral leasing activities on all federal lands and minerals that are either unleased and/or that have expired leases in the Wind River Front in the 2000 PAPA ROD (BLM, 2000). The moratorium will remain in effect until the impacts of leasing these lands for mineral development have been addressed in the Pinedale Resource Management Plan (RMP) Revision.

Furthermore, leasing decisions will not be made within the PAPA until completion of the RMP Revision. Leasing decisions will then be made in conformance with the Revised RMP. The Proposed RMP and Final Environmental Impact Statement (EIS) was released for public review on August 22, 2008 (BLM, 2008). There are approximately 37,067 acres of federal minerals within the PAPA that currently are not leased.

In addition, Ultra, Shell, Anschutz, BP American Production Company (BP), Stone Energy Corporation (Stone), Newfield Energy Corporation (Newfield), and Yates Petroleum Corporation (Yates) have offered to suspend additional activity for at least 5 years from the signing of this ROD on certain leases, shown on Map 3. This will collectively include 49,903 acres inside the PAPA of which 16,954 acres are within big game crucial winter range and 37,019 acres are within 2 miles of a greater sage-grouse lek.

Map 3
Federal Suspended and Term NSO Leases



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After the 5-year period, an individual lease or multiple leases under federal suspension and/or term NSO will be considered for conversion to "available for development" when a comparable acreage in the core area (not needed for production operations) has been returned to functioning habitat through the completion of all development operations and successful reclamation of all portions of the well pads within the comparable area. Habitat will be considered functioning when the comparable area is providing sustainable forage (shrubs, forbs, and grass) for wildlife and livestock as determined by animal use and stable populations based on the Wildlife Monitoring and Mitigation Matrix (Appendix B). Successful reclamation for releasing federal suspended and/or term NSO leases will be determined by the Full Site Final Reclamation Criteria in Appendix C. BLM will confer with the Wyoming Game and Fish Department (WGFD) prior to releasing a federal suspended and/or term NSO lease.

Consistent with their commitment to the BLM, suspensions could be lifted and development could proceed on leases in the flanks offered for suspension by Anschutz after the 5-year primary suspension term, but development on the Anschutz leases would be subject to seasonal restrictions.

2.4 TRANSITION PERIOD

A transition period to full "Concentrated Development" of approximately 24 months is needed after signing of this ROD. This transition period will provide the BLM AO with flexibility to allow deviation from the concentrated development and delineation described below. During this transition period the Operators will, among other things, determine operating schedules and construction windows, identify pads for interim-reclamation, and acquire new equipment.

2.5 ANNUAL AND 10-YEAR PLANNING

The Operators will provide annual and 10-year rolling forecasts of field development at the annual planning meetings. Each year, the Operators will review and alter these plans as appropriate with the BLM and WGFD to further reduce impacts.

2.6 WELL PAD LIMITATIONS

The entire PAPA will be developed with no more than 600 well pads on all lands in the PAPA. Throughout the PAPA no more than one well pad per quarter section (160 acres) is authorized, per Operator. Where existing development already exceeds this limit, no additional pads will be authorized. Applications for exceptions to the well pad limit may be submitted and will be reviewed during the annual planning meeting. Applications for well pad limit exceptions are subject to approval from the BLM AO and will require additional National Environmental Policy Act (NEPA) analysis. Operators are allowed to develop from all well pads existing at the signing of this ROD. Operators are required to maximize use of existing well pads before constructing new well pads.

2.7 LIQUIDS GATHERING SYSTEM

This ROD requires Ultra, Shell, and Questar to install a liquids gathering system to reduce the amount of truck traffic associated with production. This is expected to eliminate approximately 165,000 truck trips annually during peak production.

2.8 GEOGRAPHIC MANAGEMENT

This ROD establishes four different geographic areas for management of oil and gas activities in the PAPA: 1) Core Area with Development Areas (DAs), 2) Potential Development Area (PDA), 3) the River Corridor and 4) Flanks as shown on Map 4. Development and delineation activities are managed differently within these areas. Delineation is defined in this ROD as the determination of the productive extents of the field. Conceptual maps depicting progression of development and delineation described below are provided in Appendix D.

2.8.1 Core Area

The Core Area established in this ROD includes 45,415 acres or 23 percent of the PAPA as shown on Map 4. There will be five Development Areas (DA-1 through DA-5). Cumulatively, DAs 1through 5 exactly equal the Core Area. Relief from seasonal restrictions for big game (pronghorn and mule deer) and greater sage-grouse will be granted in the Core Area as provided for below in Core Area Development and Core Area Delineation. Relief from other seasonal restrictions will be allowed on a site-specific basis where such relief is consistent with laws and regulations to implement the systematic development of the PAPA. The exact location, extent and duration of the seasonal relief will be determined at annual planning meetings for all DAs.

2.8.1.1 Core Area Development

Development Area 1

Development in DA-1. Year-round development with exceptions to seasonal restrictions for big game (pronghorn and mule deer) and greater sage-grouse will be allowed in DA-1 upon signing of this ROD subject to: 1) Concentrated year-round development proceeding from south to north and 2) drilling and completion activity is limited to a contiguous 6 square-mile area.

The 6 square-mile area should be no more than 2 miles in north-south extent except when the 6 square-miles cannot be maintained due to narrowing of DA-1 in the east-west direction. Recommendations for the shape and location of the 6 square-mile area will be reviewed during the annual planning meeting and decisions will be made by the BLM AO.

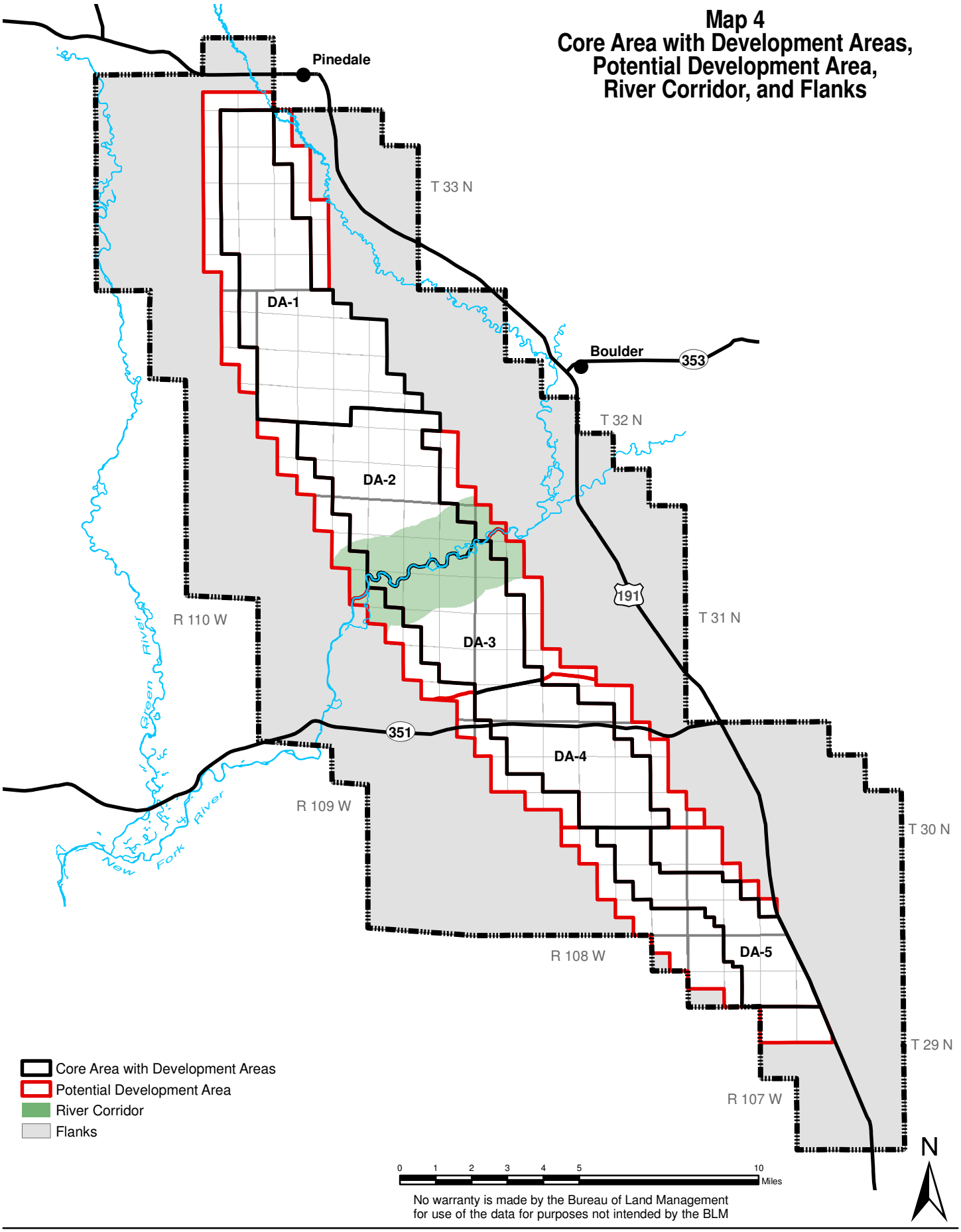
Development Area 2

Development in DA-2. Year-round development will be allowed within DA-2 upon signing of this ROD. Development will be limited to two groups of drilling rigs; one in the southern portion of DA-2 and one in the northern portion of DA-2. Drilling will converge at the center of DA-2.

Anschutz Leases in Development Areas 1 and 2

Anschutz has leases within DA-1 and DA-2. Anschutz is not constrained by the development sequence defined above. Year-round development with exception to big game and greater sage-grouse seasonal restrictions will be allowed on Anschutz leases in DA-1 and DA-2 as long as their offered leases are suspended. Anschutz is authorized no more than three year-round drilling rigs and no more than three active well pads at any time in the Core Area.

Map 4
Core Area with Development Areas, Potential Development Area, River Corridor, and Flanks



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Development Area 3

Development in DA-3. Year-round development in DA-3 will occur with exceptions to seasonal restrictions for big game and greater sage-grouse seasonal habitats. Year-round development may begin in DA-3 once the southernmost group of drill rigs in DA-2 moves 1 mile north of all portions of the River Corridor, which is described below and shown on Map 4. The initiation of year-round development in DA-3 will require recommendation during the annual planning meeting and will require approval from the BLM AO. The movement, location, and concentration of drilling rigs in DA-3 will be reviewed during the annual planning meeting. Development should move east to west to provide maximum undisturbed pronghorn crucial winter range and minimize disruption of pronghorn movement.

Development Area 4

Development in DA-4. Upon signing of this ROD, year-round development will be allowed within DA-4 through exceptions to seasonal restrictions for big game and greater sage-grouse seasonal habitats.

Development Area 5

Development in DA-5. Upon signing of this ROD, year-round development will occur through exceptions to seasonal restrictions for greater sage-grouse seasonal habitats in DA-5.

2.8.1.2 Core Area Delineation

Development Area 1

Delineation in DA-1. Delineation drilling in the Stewart Point area (see Map 5) will be conducted during the first 2 years following the signing of this ROD, while adhering to seasonal restrictions for wildlife habitats. Two years following the signing of this ROD, no additional pads for delineation will be allowed in DA-1. If the Operators determine that additional delineation activities are necessary in DA-1, the Operators must apply for the additional delineation activities and announce the application during the annual planning meeting and obtain approval from the BLM AO. Additional delineation activities will be limited to 1 mile from the nearest year-round development pad in DA-1.

Development Area 2

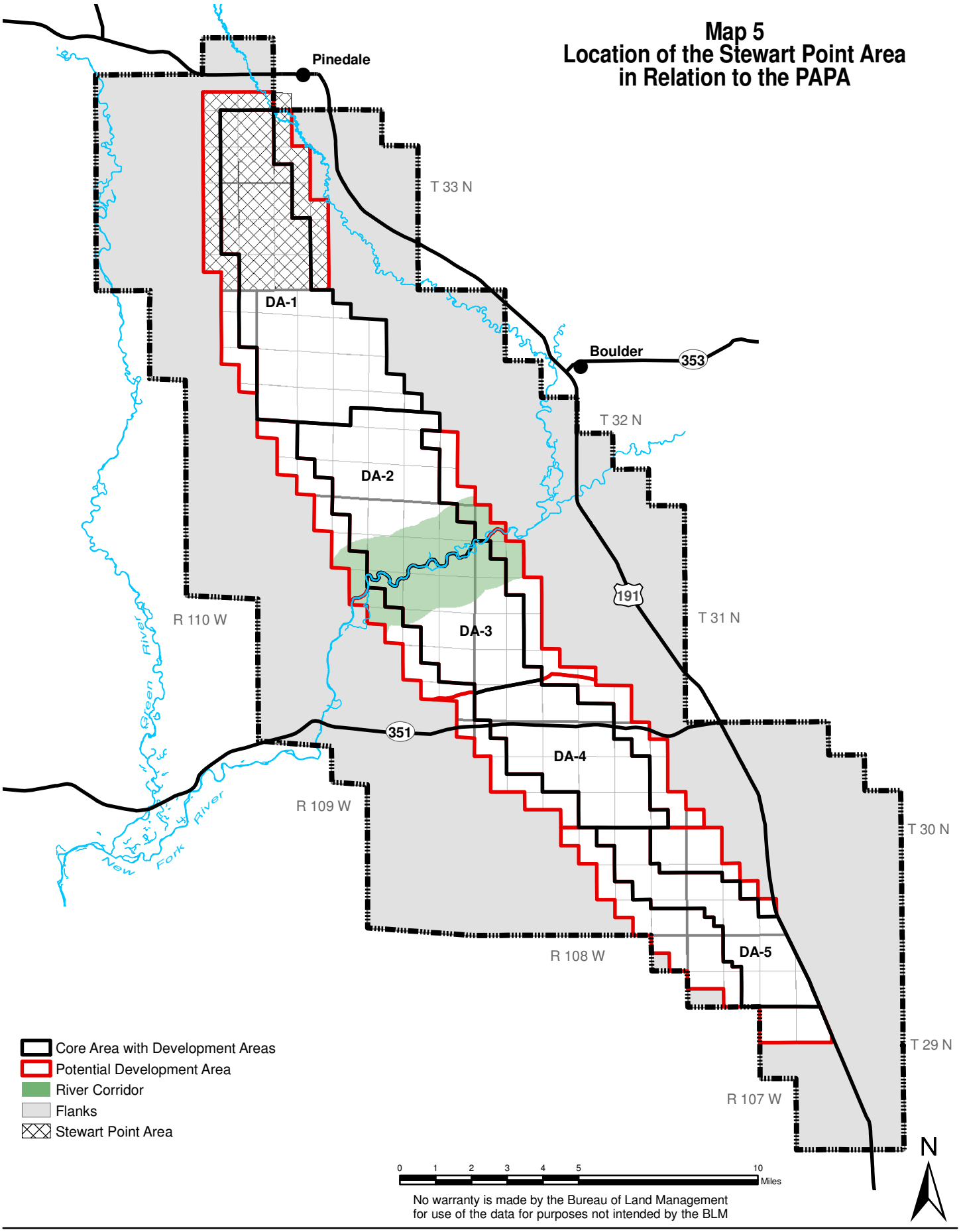
Delineation in DA-2. Year-round delineation will be allowed in DA-2 by exception to restrictions for big game and greater sage-grouse seasonal habitats.

Development Area 3

Delineation in DA-3. Delineation will be allowed in DA-3 with exception to seasonal restrictions for big game seasonal habitat. Seasonal restrictions for greater sage-grouse habitat will apply to delineation drilling.

Delineation will occur in two phases. Phase 1 delineation will begin upon signing of this ROD and will occur on a north-south line in the western-most portion of Range 108 West. It will extend from the south boundary of DA-3 to the north boundary of DA-3 generally occurring within a 1.5 mile-wide area (east-west) at any time. Delineation will then proceed to the east along the north to south line toward the east boundary of DA-3.

Phase 2 delineation will begin 1) when Phase 1 delineation is complete or 2) 18 months prior to development beginning in DA-3 with BLM AO approval, whichever occurs sooner. Phase 2 delineation will precede development and will occur on a north-south line in the eastern-most


Map 5
Location of the Stewart Point Area
in Relation to the PAPA
Pinedale
T 33 N
DA-1
Boulder
353
T 32 N
DA-2
191
R 110 W
DA-3
T 31 N
Green River
351
DA-4
R 109 W
T 30 N
New Fork River
R 108 W
DA-5
T 29 N
R 107 W
Core Area with Development Areas
Potential Development Area
River Corridor
Flanks
Stewart Point Area
0 1 2 3 4 5 10
Miles
N
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portion of Range 109 West. It will extend from the south boundary of DA-3 to the north boundary of DA-3 generally occurring within a 1.5-mile area (east-west) at any time proceeding westward toward the west boundary of DA-3.

Phase 1 and Phase 2 delineation will not occur at the same time. Should Phase 2 delineation commence prior to completion of Phase 1 delineation, Phase 1 delineation will cease until completion of Phase 2 delineation. Requests for modifications to the delineation progression sequence may be made at the annual planning meeting and will be subject to approval by the BLM AO.

Development Area 4

Delineation in DA-4. Year-round delineation will be allowed in DA-4 upon signing of this ROD with exception to restrictions for big game and greater sage-grouse seasonal habitats.

Development Area 5

Delineation in DA-5. Delineation drilling will be allowed in DA-5 upon signing of this ROD with exception to seasonal restrictions for greater sage-grouse seasonal habitats.

2.8.2 Potential Development Area

The PDA is located adjacent to the Core Area. The PDA is available for year-round development and contains approximately 24,875 acres or 12 percent of the PAPA, as shown on Map 4. The PDA adjacent to DA-1 and DA-2 is generally a 0.5-mile buffer around the Core Area. There is no PDA on portions of the east side of DA-1 and DA-2. PDA-3 and PDA-4 include a 0.5-mile buffer surrounding the Core Area. PDA-5 surrounds DA-5.

2.8.2.1 PDA Development

Requests for year-round development in the PDA will be reviewed at the annual planning meeting and will require approval of the BLM AO. If approval is granted by the BLM AO for year-round development either in all or part of PDA-5, year-round development will only occur within one mile of one of the five designated key greater sage-grouse leks at any time. The designated key leks are Shelter Cabin, Rocks, South Rocks, Alkali Draw, and Sand Draw as shown on Map 6.

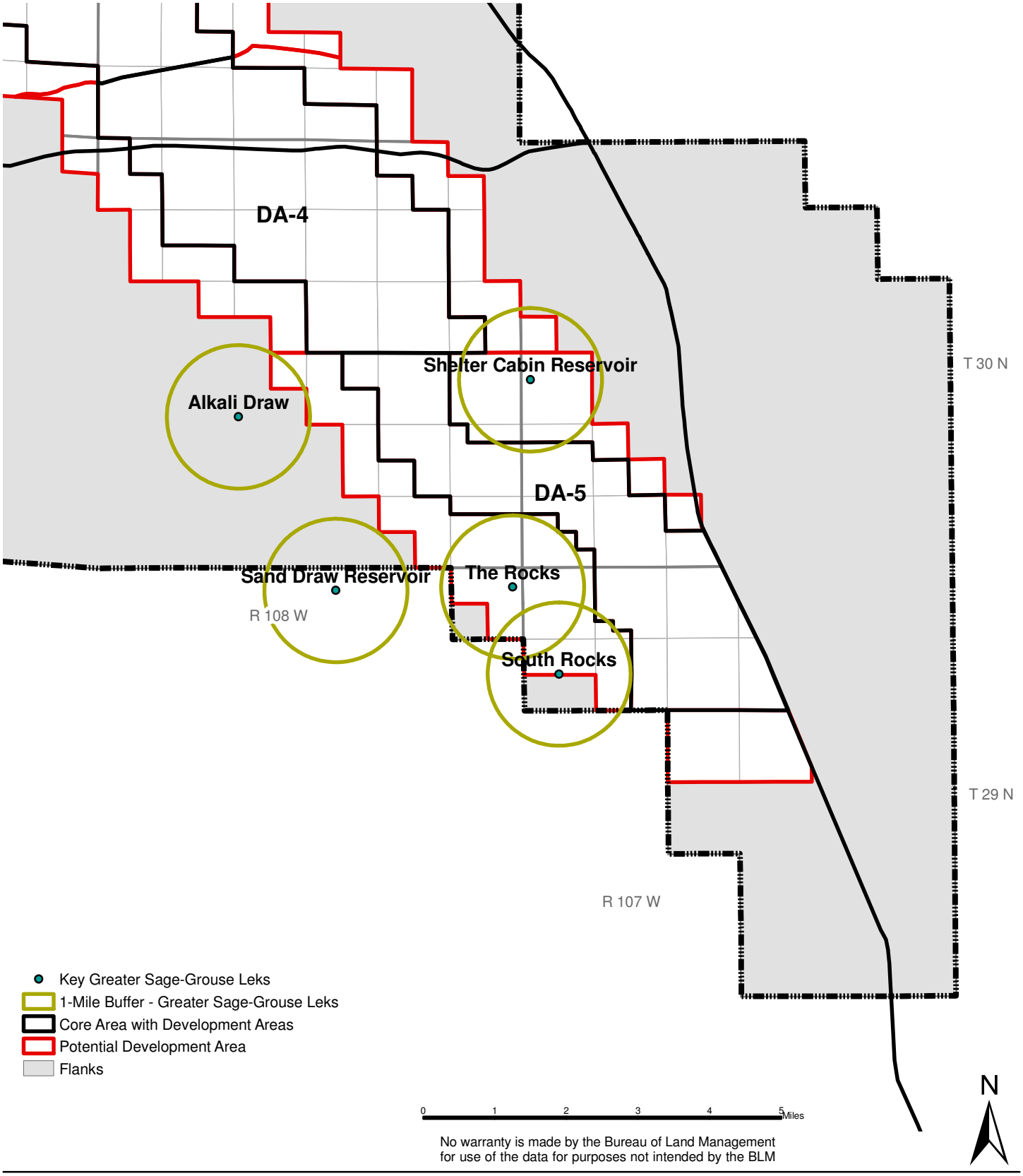
2.8.2.2 PDA Delineation

Delineation in the PDA must adhere to seasonal habitat restrictions.

2.8.3 The River Corridor

Due to the concentration of raptors and raptor nests along the New Fork River, specifically Bald Eagles, development and delineation within this area is expected to occur only while adhering to seasonal habitat restrictions for raptors (restricted development from November 1st to August 15th) within 1 mile on either side of the middle of the river. The total area of this River Corridor area is 7,410 acres or 3 percent of the PAPA. BLM and the Operators will comply with the Endangered Species Act (ESA), Bald and Golden Eagle Protection Act (BGEPA), and Migratory Bird Treaty Act (MBTA). Realizing the benefits of the systematic development as analyzed in the Final SEIS, the BLM will work cooperatively with the U.S. Fish and Wildlife Service (USFWS) to develop and utilize measures to comply with these laws and allow for the systematic development of this area. The location of pads, timing restrictions, and mitigation measures will be determined at the annual planning meeting and will require approval from the BLM AO. Should year-round development and delineation within the River Corridor be allowed, development in DA-3 will be initiated when year-round development moves 1 mile north of the New Fork River in DA-2.

Map 6
Location of Key Greater Sage-Grouse Leks in Relation to DA-5



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2.8.4 Flanks

The area within the PAPA but outside of the Core Area and PDA is designated as the "Flanks." The total area of the Flanks is approximately 127,740 acres or 64 percent of the PAPA. As described in Section 2.3 above, approximately 49,900 acres will not have additional activity for at least 5 years and approximately 37,000 acres of federal minerals are currently not leased. Development and delineation in the Flanks will occur with adherence to seasonal habitat restrictions and will be subject to the management actions listed below for each Management Area (MA). The MAs are shown on Map 7.

Well pad and surface disturbance limits have been revised to reflect better drilling technologies. For those MAs with an identified well pad density threshold, when that threshold is reached, no additional well pads will be authorized until additional environmental analysis has been completed or a well pad has been successfully reclaimed to full bond release status. For those MAs with an identified surface disturbance limit, when that limit is reached, no additional surface disturbance will be authorized until additional environmental analysis has been completed or the disturbance has been successfully reclaimed to interim reclamation status as defined in Appendix C.

2.8.4.1 MA 1 Lander Trail

Objective:

Preserve the integrity of the trail and the trail viewshed.

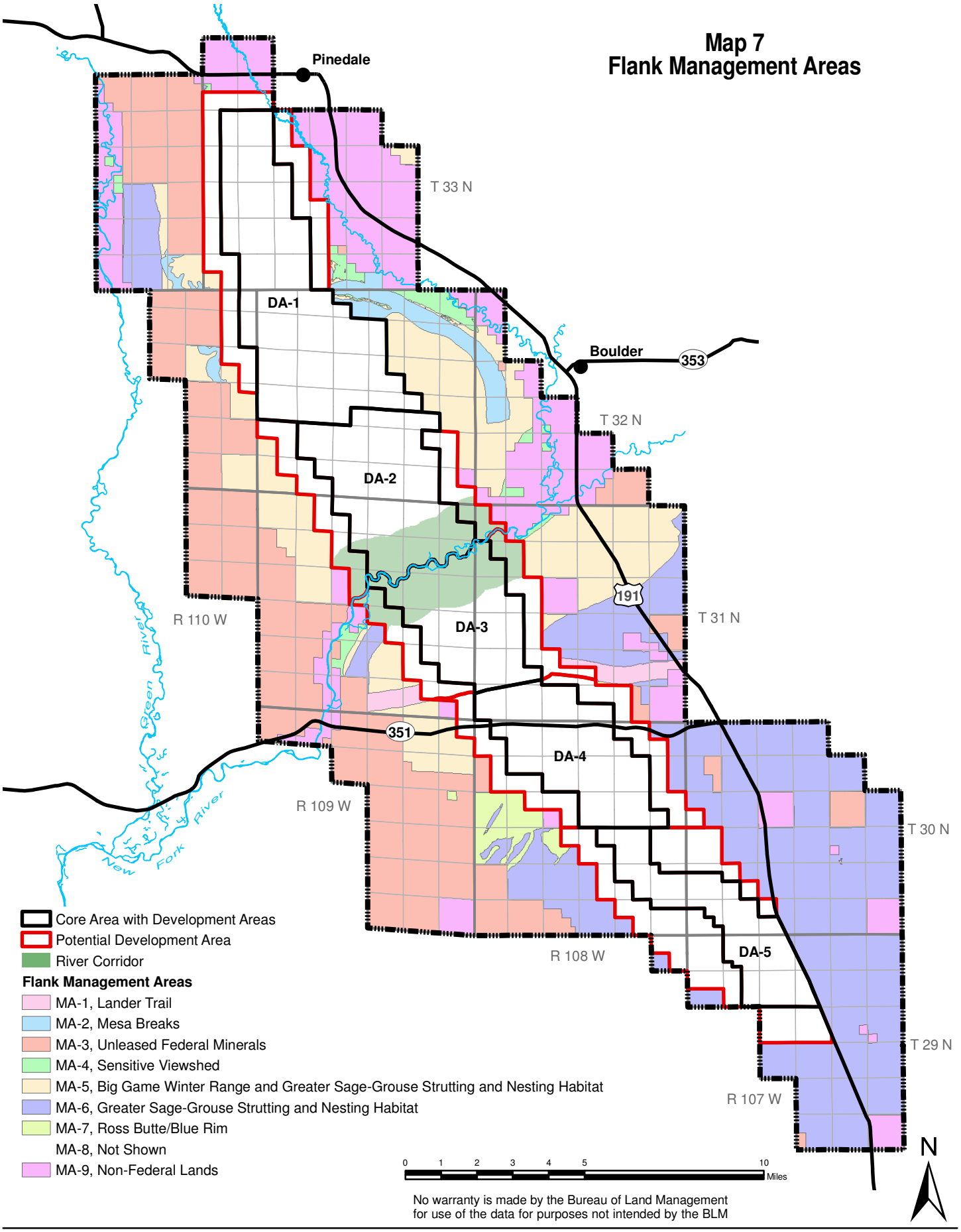
Actions:

1. To minimize impacts to the trail setting, no construction activities will be allowed within the 0.25 mile either side NSO area of the Lander Trail. No new disturbance will be allowed on the trail except where existing improved roads and pipelines currently cross the trail.
2. In the trail viewshed (defined as 3 miles north of the trail and south of the trail to Wyoming Highway 351) beyond the current 0.25-mile either side of the Lander Trail NSO, the completion of a visibility analysis will be required on a case-by-case basis so that well pads, access roads, and pipelines can be located in a manner that minimizes their visibility from the trail to the greatest extent practicable. Visibility analysis will involve completing a visual resource contrast analysis (BLM Manual H-8431-1; Form 8400-4) and utilizing viewshed analyses and/or visual simulation modeling to determine the best location to screen facilities.

2.8.4.2 MA 2 Mesa Breaks

Objective:

Maintain the existing quality, suitability and habitat effectiveness of the Mesa Breaks deer crucial winter range. The Mesa Breaks provide thermal cover and forage during severe winters. Retain the existing character of the landscape and sensitive viewshed.


Map 7
Flank Management Areas
Pinedale
Boulder
353
191
351
T 33 N
T 32 N
T 31 N
T 30 N
T 29 N
R 110 W
R 109 W
R 108 W
R 107 W
DA-1
DA-2
DA-3
DA-4
DA-5
Green River
New Fork River
Core Area with Development Areas
Potential Development Area
River Corridor
Flank Management Areas
MA-1, Lander Trail
MA-2, Mesa Breaks
MA-3, Unleased Federal Minerals
MA-4, Sensitive Viewshed
MA-5, Big Game Winter Range and Greater Sage-Grouse Strutting and Nesting Habitat
MA-6, Greater Sage-Grouse Strutting and Nesting Habitat
MA-7, Ross Butte/Blue Rim
MA-8, Not Shown
MA-9, Non-Federal Lands
0 1 2 3 4 5 10
Miles
N
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Actions:

1. To minimize impacts to highly sensitive wildlife habitat, soils, cultural and paleontological resources, viewshed, and seasonal recreation use areas consistent with lease rights, BLM will not approve permits within MA 2 Mesa Breaks unless BLM determines that the overall environmental impacts will be less within MA 2 Mesa Breaks than outside.

2. Disturbance on slopes 10 percent or greater will be avoided within MA-2 Mesa Breaks and on highly erosive soils or soils with a high degree of color contrast to prevent erosion, water quality degradation, and visual contrast from disturbance.

2.8.4.3 MA 3 Unleased Federal Minerals

Action:

1. The BLM will not make leasing decisions on these parcels until completion of the Pinedale RMP Revision. Any currently leased parcels that expire during preparation of the RMP will be included in this MA.

2.8.4.4 MA 4 Sensitive Viewshed

Objective:

Protect the sensitive viewshed by retaining the existing character of the landscape. Protect and maintain winter and crucial winter deer range. Protect and maintain existing raptor nesting habitat.

Action:

1. To the extent practicable, new roads will avoid the area of MA 2 Mesa Breaks and MA 4 Sensitive Viewshed. Screening of tanks, other facilities, and road and pipeline disturbance that could degrade the visual quality of the landscape from view points within the Town of Pinedale, adjacent housing development areas, and portions of U.S. Highway 191 will be required.
2. No permanent facilities (90 days or more) that cannot be adequately mitigated for the protection of visual resources will be authorized.
3. Disturbance on slopes 10 percent or greater will be avoided on the face of the Mesa and on highly erosive soils or soils with a high degree of color contrast to prevent erosion, water quality degradation, and visual contrast from disturbance.
4. A maximum of four well pads per section (640 acres) will be allowed.
5. A maximum of 40 acres of surface disturbance per section will be allowed.

2.8.4.5 MA 5 Big Game Winter Range and Sage-Grouse Strutting and Nesting Habitat

Objective:

Limit surface disturbance and human activity which could displace deer and pronghorn from winter ranges and greater sage-grouse from strutting and nesting habitat resulting in mortalities and reduced population levels.

Maintain sufficient undisturbed or minimally disturbed habitats to protect wildlife habitat values.

Implement measures to screen activities and facilities so they do not attract the attention of a casual observer in Visual Resource Management (VRM) Class III areas on either side of the New Fork and Green rivers.

Actions:

1. A maximum of two well pads per section will be allowed.
2. A maximum of 40 acres of surface disturbance per section will be allowed.

2.8.4.6 MA 6 Sage-Grouse Strutting and Nesting Habitat

Objective:

Protect this area from unnecessary surface disturbance and human activities which could displace greater sage-grouse from crucial strutting and nesting habitat resulting in mortalities and reduced population levels. Partially retain the existing character of the landscape, on each side of U.S. Highway 191 and the Wind River Front Special Recreation Management Area (SRMA) by implementing measures which reasonably incorporate into the surface disturbance and/or facility visual design considerations that will mitigate anticipated visual impacts so they do not dominate the view of the casual observer and so they replicate the existing characteristics of the landscape. Maintain sufficient undisturbed or minimally-disturbed greater sage-grouse habitats, which pertain to all seasonal habitats, to ensure long-term species sustainability and functioning habitats.

Actions:

1. A maximum of one well pad per section will be allowed.
2. A maximum of 40 acres of surface disturbance per section will be allowed.

2.8.4.7 MA 7 Ross Butte/ Blue Rim

Objective:

Avoid disturbance to the fossil-bearing formations on a site-specific basis and protect paleontological fossil resources. Avoid disturbance on highly erodible soils and maintain soil stability. Protect and maintain existing raptor nesting habitat. Protect sensitive plant species. Protect the visual quality of the unique badland area. Maintain the hydrologic function within stream segments and their associated watersheds within the Ross Butte/Blue Rim drainage area(s).

Actions:

1. A maximum of one pad per section per Operator will be allowed.
2. A maximum of 40 acres of surface disturbance will be allowed per section.
3. Watershed protection plans will be required for cumulative disturbances greater than 10 acres. Watershed protection plans will demonstrate the method in which Operators will prevent measurable degradation or aggradation.

2.8.4.8 MA 8 Minimal Conflict Area

MA 8 has been dissolved into other MAs and is provided only for correlation with the 2000 PAPA ROD (BLM, 2000).

2.8.4.9 MA 9 Non-Federal Lands

MA 9 consists of private and state lands not under the jurisdiction of the BLM. However, other federal agencies regulate certain activities on private and state lands.

For example, the U.S. Army Corps of Engineers (COE) regulates the discharge of dredged or fill materials into waters of the United States, and will require Operators to demonstrate that impacts to special aquatic sites, including wetlands, have been avoided and minimized to the maximum extent practicable.

In addition, the USFWS administers migratory bird species, threatened and endangered species, and species that are proposed for listing. Operators are required to comply with the ESA, BGEPA, and MBTA, regardless of land ownership, in the implementation of construction, drilling, and operation of natural gas development.

2.9 MONITORING AND MITIGATION FUND

Based upon the impacts and assumptions contained in the SEIS, Ultra, Shell, and Questar have voluntarily proposed, and the BLM acknowledges the creation of the Pinedale Anticline Monitoring and Mitigation Fund (Monitoring and Mitigation Fund or Fund) to mitigate potential impacts to wildlife, air, and other resources identified in the Final SEIS (BLM, 2008). BLM's decision in this ROD takes into account the funding commitments made and relies on the intended uses of this Fund. The total contribution to the Fund by Ultra, Shell, and Questar will be $36 million. Ultra, Shell, and Questar will each annually contribute $7,500 for each well spudded on their respective leaseholds the previous calendar year. Ultra, Shell and Questar may make advanced contributions to the Fund to implement projects. Such contributions will be credited toward the end of development contributions. Annual contributions are anticipated to be $1.8 million per year with an initial contribution of at least $4.2 million.

The Fund will be used for both on-site and off-site mitigation and project-related activities in the PAPA vicinity including additional air quality monitoring, additional wildlife, livestock, vegetation and reclamation research, analysis, monitoring, and mitigation. The Fund could be used to support wildlife mitigation such as basic habitat enhancements for improvement of habitat function both on-site and off-site and to identify and protect key migration routes and wildlife habitat. The Fund may also be used for monitoring impacts resulting from development and the effectiveness of the mitigation. Mitigation and monitoring may occur on federal, state, or private lands. It may also be used to provide funds to governmental agencies to pay personnel to complete, oversee, mitigate, and monitor PAPA activities. The Fund is not intended to fund projects or proposals to mitigate potential impacts beyond those identified in the Final SEIS (BLM, 2008).

The Fund will be managed by the proposed Pinedale Anticline Monitoring and Mitigation Board (the Board) which will consist of local designees of BLM, Wyoming Department of Agriculture (WDA), WGFD, WDEQ, and a Sublette County Commissioner selected by the Governor. The primary purpose of the Board will be to generate, approve, and fund appropriate project proposals. The Fund will be used consistent with the BLM policy on off-site compensatory mitigation.

Wildlife Heritage Foundation of Wyoming will be responsible for depositing the funds into, and disbursing the funds out of, one or more accounts at one or more banks authorized to conduct business in Wyoming. The Board will have final approval of the bank or banks nominated by the Wildlife Heritage Foundation of Wyoming. The Wildlife Heritage Foundation of Wyoming will account for the funds as directed by the Board. The Fund will be used to implement mitigation outlined in the Wildlife Monitoring and Mitigation Matrix (Appendix B), as appropriate. The Fund will also be used to provide additional staffing for WDEQ and provide for monitoring upgrades. Projects submitted by non-profit organizations and/or governmental agencies will be reviewed by the Board. Approved mitigation projects on federal lands, the effects of which have not been

analyzed, will require the appropriate level of environmental review prior to implementation. In that instance, the project proponent will prepare an environmental analysis for the mitigation proposal for independent review and adoption by the BLM or other federal agency in compliance with NEPA.

The Fund is in addition to the net cost Ultra, Shell, and Questar will incur by implementing operational and other on-site mitigation measures, including but not limited to:

- Using directional drilling,
- Using consolidated pad construction and development,
- Implementing consolidated completion activity,
- Installing rig engine NO_x (nitrogen oxide) emissions controls,
- Following existing air monitoring agreements with Wyoming Department of Environmental Quality Air Quality Division (WDEQ-AQD) for the Southwest Wyoming Air Quality Management Project,
- Incurring expenses to reduce emissions from any project related source,
- Participating and funding visibility and ozone modeling required by this ROD,
- Funding necessary groundwater characterization and monitoring ($2 million) required by this ROD,
- Installing a liquids gathering system,
- Assuring completion of current mule deer, pronghorn, and greater sage-grouse research,
- Completing block cultural and paleontological inventories and evaluations, and
- Conducting current habitat and vegetation inventory.

2.10 PINEDALE ANTICLINE PROJECT OFFICE

Due to the large amount of monitoring and reporting that is anticipated, this ROD establishes the Pinedale Anticline Project Office (PAPO), see Appendix E. The purpose of the PAPO is to obtain, collect, store, and distribute monitoring information to support adaptive management and analyze mitigation projects. The PAPO will coordinate closely with the Board, the Pinedale Anticline Working Group (PAWG) and the Jonah Interagency Mitigation and Reclamation Office (JIO).

2.11 PERFORMANCE-BASED MANAGEMENT

Performance-based objectives have been adopted to provide BLM greater flexibility in protection of physical, environmental, and cultural resources. Successful application of performance- or outcome-based resource management objectives require implementation of adaptive management principles, specifically requiring implementation of monitoring and subsequent evaluation to determine whether or not the requirements and/or standards (or use of new techniques and/or practices) have been applied and whether the desired objective has been achieved in a timely and efficient manner.

2.12 ADAPTIVE MANAGEMENT

Adaptive management will be based on annual planning meetings attended by the BLM and other federal, state, and local agencies (the Review Team) as outlined below and in Appendix E. In addition to the annual planning meeting, the PAWG will continue to be an advisory group to the BLM. Annually the BLM AO will evaluate the PAWG and decide how and if it should continue.

The Operators will provide information on existing development and results of relevant monitoring studies at the annual meeting of the Review Team. Recommendations will be made to the Review Team for future delineation and development drilling activities. The Operators' Annual and 10-year plans for development and delineation will be reviewed. The need for monitoring and mitigation as well as reclamation to offset impacts will be determined. The Operator's Annual and 10-year projections will be provided to the PAWG and the PAWG task groups to foster communication with the public. The PAWG will provide the BLM AO with recommendations on monitoring and mitigation. The PAWG will continue to be a mechanism for sharing information with the public and interested stakeholders, including modeling and monitoring results.

The decision to adapt management in order to meet resource objectives will be made and implemented by the BLM AO. This ROD includes a Wildlife Monitoring and Mitigation Matrix (Appendix B) that will trigger mitigation responses based upon monitoring information.

The objectives and operating standards will be presented, reviewed, and implemented in the following steps:

- **Pre-application Consultation.** The Operators will present preliminary plans to the BLM each year. During the pre-application consultation, the Operators will be informed of BLM procedures and acceptable operating standards applicable to the proposed activities. The Operators will be required to have met and demonstrate compliance with all necessary federal, state, and local permit requirements prior to the beginning of field work. The BLM, the Operators, and other stakeholders may visit proposed sites to identify issues and discuss alternatives during the pre-application consultation. Operators will be informed of any information or data that the BLM may need in evaluating the application. This information may include surveys, maps and imagery.

- **Evaluate Application.** BLM will review the proposal to:
    - Determine if the proposal complies with all applicable standards; this may be accomplished by adhering to the recommended requirements/standards or by the use of new techniques/practices that meet the objective(s).
    - Determine if additional environmental analysis (e.g., EA or EIS), is necessary prior BLM to approving new mitigation proposed to address issues identified throughout the consultation and planning process.
    - Identify 1) appropriate monitoring levels to determine the effectiveness of the implemented mitigation, 2) applicable operating standards, or 3) new mitigation, operating techniques, and methods.

- **Review Written Application for Completeness.** Operators and the BLM will meet again to finalize plans for implementation. After initial review of the written application, the application may be rejected, accepted, or additional information may be requested.

- **Issue Authorization.** BLM will issue authorizations with appropriate terms and COAs.

The decision to implement Alternative D, as modified, provides the best balance of multiple uses within the PAPA, and will sustain the long-term yield of resources while promoting stability of local and regional economies, environmental integrity, and conservation of resources for future generations (NEPA Section 101 and FLPMA Section 302). Alternative D, as modified, will provide for the management of the PAPA in a manner that allows for natural gas exploration and development while providing for mitigation of impacts on key resources, including air quality and wildlife.

The Final SEIS analysis demonstrates notable benefit from the systematic development of the oil and gas resource afforded through year-round development within the Core Area and PDA. To adequately capture this benefit, it is BLM's intent to implement a concept of enabling Operators to stay on a well pad until the well pad is completely drilled out; so long as the "drill out" complies with all applicable laws and regulations, including, but not limited to the ESA, BGEPA, and MBTA. Once areas have been cleared for development at the annual planning meeting (decision portion), monitoring, mitigation, and if needed, deterrence measures within limits identified above will be employed to ensure that "once on a pad; stay on the pad" concept can be successfully implemented.

This ROD incorporates restrictions and mitigation measures, to be used as appropriate in consideration of the need to prevent impacts to important and sensitive resources and human values, and in consideration of federal, state, and local agency, public, and affected Indian tribe concerns raised during scoping and in comments received on the Draft, Revised Draft, and Final SEIS.

This ROD is not the final review or approval for actions associated with the oil and gas development in the PAPA. The AO will review and make a decision for each federally permitted action on a site-specific basis. The methods used to authorize each surface-disturbing activity include, but are not limited to, APDs, ROW grants, Sundry Notices, or TUPs with the supporting environmental review.

All authorizations granted prior to this ROD are subject to the COAs and stipulations contained in that authorization. Subject to BLM AO approval, previous authorizations within the Core Area may be converted to year-round access.

3.0 REASONS FOR THE DECISION

The SEIS was prepared in response to the leaseholders' request to exercise the terms and conditions of their respective oil and gas leases in the project area. The environmental impacts of this ROD are fully disclosed in the SEIS. This ROD is in conformance with the Pinedale RMP (BLM, 1988). The establishment of the pipeline corridor is in conformance with the Pinedale RMP (BLM, 1988), the Green River RMP (BLM, 1997), and the Kemmerer RMP (BLM, 1986).

The environmental impacts of additional development within the PAPA are fully disclosed in the Final SEIS. The decision to approve natural gas development as described in the FEIS is in conformance with the Pinedale RMP (BLM, 1988) and the Proposed RMP and Final EIS (BLM, 2008). Implementation of this ROD will result in production of nationally significant natural gas resources consistent with the National Energy Policy (May 2001) and the National Energy Policy Act of 2005.

This ROD is based upon the analysis of a reasonable range of alternatives contained in the Final SEIS, the comments received on the proposed development, BLM policy, laws and directives concerning natural resource use for the benefit of the American people. This ROD is made in consideration of the public, local, state, and other federal agency input. In reaching this ROD, the following key issues were considered by BLM in making a decision consistent with its statutory mandate of ensuring multiple use of the public lands while balancing the associated impacts of those uses. Rationale for mitigation and actions to address each issue and reduce effects are presented.

The decision to implement Alternative D, as modified, provides the best balance of multiple uses within the PAPA, and will sustain the long-term yield of resources while promoting stability of local and regional economies, environmental integrity, and conservation of resources for future generations (NEPA Section 101 and FLPMA, Section 302). Alternative D, as modified, will provide for the management of the PAPA in a manner that allows for natural gas exploration and development while providing for mitigation of impacts on key resources, including air quality and wildlife.

3.1 SOCIOECONOMIC EFFECT

An issue of concern raised by the development of the PAPA as governed by the 2000 PAPA ROD is the influx of transient workers (those workers not maintaining permanent residence) and the ability of governmental agencies to address infrastructure shortfalls such as community support facilities, schools, hospitals and medical clinics, emergency services, housing, roads, and potable water and sewage treatment. Gas field employees express the desire to maintain permanent residence in the area, with their families, but are concerned about steady, continued employment opportunities in the PAPA. This ROD will allow for increased economic stability by reducing the number of transient workers necessary for development of the PAPA by allowing year-round operations in certain areas that would create non-seasonal jobs encouraging permanent workers to relocate to the area with their families.

Both project proponents and local government agencies identified potential revenues from tax dollars, royalties, and jobs associated with Alternative D as benefits to the state, county, and local communities. Strain on infrastructure, housing and lodging, transportation systems, fire protection services, law enforcement, and medical services were anticipated under all alternatives especially the full-field development alternatives. These issues are a major concern to local communities and governmental agencies. The Operators will provide 10-year rolling

forecasts of field development at the annual planning meetings. These forecasts will be made available to local government agencies to assist in planning efforts.

The Final SEIS identified several additional mitigation opportunities. The BLM is not requiring these additional mitigation measures as they are outside BLM's regulatory authority, but may support adoption through agencies that have regulatory authority.

3.2 TRANSPORTATION

Transportation issues arise as a result of the amount of traffic associated with development and production related activities. This ROD requires the use of liquids gathering systems to reduce the amount of truck traffic associated with production, which is expected to eliminate approximately 165,000 truck trips annually during peak production.

3.3 AIR QUALITY

Alternative D is preferable to the other alternatives because of the air quality mitigation component of this alternative. Air quality, particularly visibility and ozone, remains a concern of the BLM, Wyoming residents, cooperating agencies, and others. To address these concerns, this ROD requires continued monitoring and aggressive mitigation. This ROD is based upon mitigation developed jointly with the WDEQ and discussed in detail below and in the mitigation section of this ROD.

WDEQ-AQD announced on July 30, 2008, that evaluation of recent ozone monitoring data indicates Sublette County is not in compliance with the ozone standard. WDEQ-AQD has aggressively evaluated the elevated ozone levels in the past and secured voluntary compliance with industry to reduce volatile organic compounds (VOCs) and NO_x emissions. As an on-going effort, the state has developed additional strategies to further reduce ozone levels.

The industry's voluntary initiatives have been embraced by a number of companies. Examples of actions taken would include reducing emissions from drill rigs, retrofitting production equipment and redesigning systems to minimize/eliminate emission points, and the installation of a liquids gathering system.

The state is also pursuing a wide variety of measures to evaluate and reduce ozone levels. For example, WDEQ-AQD is proposing the adoption of stricter Best Available Control Technology (BACT) for the Jonah-Pinedale Development Area (JPDA) and other areas of concern. To supplement that, WDEQ-AQD will develop the technical capability to model the formation of ozone in the Upper Green River Basin. When that capability is in place, WDEQ-AQD will establish emission control strategies for VOCs and NO_x which are sufficient (with an adequate margin of safety) to prevent unhealthy ozone levels. Potential strategies include new permitting rules, retrofit rules, emission caps, and other actions to be determined.

To address episodic and elevated levels of ozone in the winter, the WDEQ-AQD has requested industry to develop contingency plans for short term reductions in VOCs and NO_x. WDEQ-AQD has informed BLM they intend to advise companies of the adequacy of their plans and if necessary, impose additional non-voluntary requirements.

As of July 21, 2008, WDEQ-AQD adopted a new permitting process for new sources in the Jonah Infill Drilling Project Area (JIDPA). All applicants will be required to demonstrate that their proposed facility will not prevent attainment or maintenance of air quality standards. Only upon

a satisfactory evaluation from WDEQ-AQD that the applicant meets these requirements will the new source permit be issued.

WDEQ-AQD's expanded strategy includes conducting an air toxics health assessment for Sublette County residents. In addition to the air toxics potential chemicals of concern, ozone exposure levels will be determined. Monitoring of these airborne chemicals will begin in November 2008. An Interim Risk Assessment will be available to the public in December 2008. Approximately August 2009, the draft final report will made be ready for public review.

Other actions taken by WDEQ-AQD include cooperating with the University of Wyoming and having the University conduct an independent evaluation of ozone in Sublette County. WDEQ-AQD's own Southwest Wyoming Ambient Monitoring Network is undergoing a rigorous assessment and will likely result in monitor location changes as well as the addition of an ozone monitor in Pinedale. In early 2007, WDEQ-AQD initiated a study in the Upper Green River Valley to better understand the formation of ozone and ways to effectively manage those levels. That study is nearing completion with the draft report currently being written.

BLM is aware of WDEQ-AQD's current efforts to enforce the U.S. Environmental Protection Agency's (EPA's) new 8-hour ozone standard of 75 parts per billion (ppb) and plans to work closely with WDEQ-AQD to assure the PAPA does not prevent attainment of that standard. BLM acknowledges that project work will result in ozone formation. However, BLM is committed to assuring that any mitigation necessary to reduce the project's contribution to ozone concentrations will be implemented and that project emissions of ozone precursors will be below applicable regulatory standards, to the extent consistent with BLM's role as land manager and mineral lessor.

All of the above actions and developments leading up to the Final SEIS publication, as well as WEDQ-AQD's on-going regulatory efforts, have been carefully considered by BLM.

3.4 NATURAL GAS RECOVERY

The BLM has determined that Alternative D, as modified in this ROD, provides the necessary balance between oil and gas recovery and resource protection. Under this ROD, Operators will be able to reasonably achieve their proposed level of resource recovery over time, while providing for effective wildlife habitat and mitigation observed impacts.

3.5 GROUNDWATER RESOURCES

Protection of groundwater resources, especially sources of current and future drinking water, is a major issue. Detection of hydrocarbons in industrial water wells is a concern. Potential causes have been identified and mitigation measures have been suggested. BLM will continue to work with the regulatory agencies and the Operators to identify and mitigate causes of contamination. This ROD includes increased monitoring and mitigation to further protect groundwater resources.

3.6 WILDLIFE AND AQUATIC RESOURCES

Wildlife issues focus on the impacts of development in the PAPA resulting from direct habitat loss, indirect loss through animal avoidance of areas proximal to developments, and habitat fragmentation.

Relief from seasonal restrictions for mule deer and antelope crucial winter range and greater sage-grouse habitat is based upon this ROD affording equal or greater protection for the big

game and greater sage-grouse populations than those afforded by seasonal restrictions given the current level of development in the PAPA. Specifically, the decisions in this ROD are preferred because:

1. Seasonal restrictions do not preclude production activity, only development activity. This ROD will afford superior crucial winter range and greater sage-grouse habitat in the long-term through reducing disturbance, both to habitat and that caused by human presence, during the production phase. The long-term reduction in year-round human presence is due to a reduction in the number of well pads, the liquids gathering system and computer-assisted operations;
2. Relief from seasonal restrictions will allow for orderly systematic development afforded by such relief resulting in decreased development time and decreased time for commencement of well pad reclamation;
3. Relief from seasonal restrictions will maximize pad drilling to minimize the disturbance footprint and habitat fragmentation;
4. Acceptance of the offered voluntary lease suspensions to maintain existing wildlife habitat;
5. A Monitoring and Mitigation Fund that can be utilized to enhance or conserve wildlife habitat;
6. Implementation of the Wildlife Monitoring and Mitigation Matrix (Appendix B) to ensure that appropriate management actions are taken, if necessary.

The decision to grant relief is unique to the PAPA, specifically the Core Area and the PDAs and will not likely be appropriate for other areas because of the level of existing development, the leasehold patterns, and the unprecedented voluntary level of cooperation that the Operators have provided for this development plan.

Ultra, Shell, Anschutz, BP, Stone, Newfield, and Yates have offered to conduct no additional activity on certain leases in the Flanks of the PAPA for at least 5 years as shown in Map 3. This will collectively include 49,903 acres inside the PAPA of which 16,954 acres are within big game crucial winter range and 37,019 acres are within 2 miles of a greater sage-grouse lek. The SEIS acknowledged that habitat impacts will be substantial due to full field development. The mitigation strategy contained within this ROD includes limiting the spatial extent of development, reducing the number of pads needed to develop the resources, and reducing human presence through the use of liquids gathering systems and computer assisted operations. Further, this ROD includes a Wildlife Monitoring and Mitigation Matrix (Appendix B) that sets specific triggers for specific management responses. The Monitoring and Mitigation Fund will be used to implement appropriate projects, such as habitat improvements, to further mitigate impacts.

4.0 MITIGATION MEASURES

This ROD includes mitigation measures applicable to both on-site and off-site actions. On-site administrative requirements, COAs, and mitigation requirements are used to prevent certain impacts to resources and guide field development activities to compensate for, resolve, minimize, or avoid impacts to resources. Appendix A presents administrative requirements and potential mitigation to be applied when supported by site-specific environmental review. Key mitigation measures have been identified here. Additional mitigation measures may be imposed through the adaptive management process.

Mitigation and monitoring implemented under the 2000 PAPA ROD will be continued subject to adaptive management. This mitigation and monitoring includes, but is not limited to monitoring raptors, bald eagle winter roosts, mapping prairie dog colonies, surface- and ground-water monitoring, and historic trail monitoring and mitigation. The current Lander Trail Programmatic Agreement (PA) (signed 2004) will need to be amended. Most of the parameters of the PA have been met and further development issues will be addressed.

4.1 AIR QUALITY

4.1.1 Visibility

The final goal of the air quality mitigation for visibility is to ensure that emissions from the PAPA result in zero days of visibility impairment over 1 deciview (dv) at the Bridger Wilderness Area.

There are three milestones in meeting this goal:

1. Within 12 months after signing of this ROD modeled project related visibility impacts will be no greater than 40 days of visibility impairment over 1 dv at the Bridger Wilderness Area.
2. Within 42 months after signing of this ROD modeled project related visibility impacts will be no greater than 10 days of visibility impairment over 1 dv at the Bridger Wilderness Area.
3. Within 78 months after signing of this ROD modeled project related visibility impacts will be no greater than 0 days of visibility impairment over 1 dv at the Bridger Wilderness Area. Unless BLM, WDEQ-AQD, and the Operators have reached an alternative approach to achieve the goal of zero days of visibility impairment, BLM may reduce the pace of development to achieve this goal.

Demonstrations of progress in meeting these milestones will be provided annually by the Operators. This information will be provided to the PAPO and will be made publicly available.

BLM is committed to assuring that any mitigation necessary to achieve the goal of zero days of modeled visibility impairment will be implemented. BLM, WDEQ-AQD, and the Operators will work together to evaluate impacts and, if needed, sequentially review and employ the most effective technologies available to address impacts to visibility. Absent an effective technology to achieve further reductions beyond 10 days of visibility impairment at the Bridger Wilderness Area, adjustments in the pace of development may be utilized to achieve zero days of modeled visibility impairment. Mitigation could include, but will not be limited to:

- Replacing diesel-fired drilling rig engines with natural gas-fired drilling rig engines,
- Using fuel additives,
- Using gas turbines rather than internal combustion engines for compressors,

- Reducing the number of drilling rigs,
- Requiring Tier 2 equivalent (or better) emissions on drilling rig engines,
- Installing selective catalytic reduction on drilling rig engines,
- Using electric drilling rigs,
- Implementing electric compression,
- Requiring centralization of production facilities to reduce truck traffic,
- Adopting cleaner technologies on completion activities, and other ancillary sources;
- Implementing advancements in drilling technology; and
- Reducing the pace of development.

Implementation. The following measures will be implemented to ensure that air quality impacts are mitigated:

1. To provide more predictability during the development phase, Operators will annually develop a 10-year rolling forecast or development plan for submission to the BLM and WDEQ-AQD. The forecast or development plan will report the anticipated activity levels and projected air emissions from all project related sources in the PAPA as identified by WDEQ-AQD. The annual forecast will continue through the development period. Operators will meet annually with the BLM and WDEQ-AQD and in consultation with EPA to review the annual forecast and monitoring data and evaluate alternate ways to achieve the visibility impact reduction goal specified in paragraph #4 (below), beyond the 80 percent drilling rig engine NO_x emission reductions specified in paragraph #3 (below). Upon consideration of the annual forecast, the BLM and WDEQ-AQD in consultation with EPA will determine any necessary air dispersion modeling to be run by the Operators for the coming year. Modeling will be performed using protocols approved by BLM and WDEQ-AQD in consultation with EPA. Any modeling will be summarized and submitted to the BLM and WDEQ-AQD no later than the 11th month following the annual planning meeting.

2. No later than 1 year after signing of this ROD, Operators will adopt air emission control strategies which reduce predicted visibility impacts to levels predicted for 2009 Alternative B emissions mitigated to 2005 actual emissions levels described above (i.e., which are modeled to result in no more than 40 days greater than 1.0 dv of visibility impairment). This will provide an almost immediate reduction of visibility impacts from current development.

3. All Operators will accelerate the use of advanced technologies to reduce NO_x emissions to reduce predicted visibility impacts to the 80 percent drilling rig engine NO_x emissions reduction scenario, which is modeled to result in no more than 10 days greater than 1.0 dv of visibility impairment. The 80% minimum reduction must occur no later than 42 months following signing of this ROD. To ensure that any drilling rig NO_x emission reductions are enforceable, WDEQ-AQD, a cooperating agency, is administrating an interim permit policy to reduce VOC and NO_x emissions, effective July 21, 2008. This policy will require the Operators to demonstrate that proposed facilities will not prevent attainment or maintenance of an air quality standard.

4. During the annual planning meeting, as specified in paragraph #1 in this section, Operators, WDEQ-AQD, and the BLM in consultation with EPA will collaboratively identify methods to reduce air emissions beyond the 80 percent drilling rig engine NO_x emissions goal. No later than the fifth annual planning session following signing of this

ROD, Operators will submit to the collaborative group an evaluation of alternatives, and recommend a plan that addresses all sources from project activities, and of which the aim is to meet a predicted visibility impact objective of no more than zero days greater than 1.0 dv of visibility impairment. The Operators' evaluation will include modeling of the expected reduction in predicted visibility impairment which can be achieved by each alternative as well as an implementation schedule. All visibility modeling shall be performed using protocols approved by WDEQ-AQD and BLM in consultation with EPA. BLM is committed to assuring that any mitigation necessary to achieve the goal of zero days of modeled visibility impairment will be implemented. BLM, WDEQ, and the Operators will work together to evaluate impacts, and if needed, sequentially review and employ the most effective technologies available to address impacts to visibility. Absent an effective technology to achieve further reductions beyond the 80 percent described in the Final SEIS, adjustments in the pace of development may be utilized to achieve zero days of modeled visibility impairment. The collaborative group will also specify a schedule for completely implementing the plan.

5. All Operators will comply with WDEQ-AQD permitting regulations to establish emission limitations for production equipment and compression facilities and will voluntarily institute any other emission reduction measures that have been proposed as part of the alternate method selected by the collaborative group.

6. The Monitoring and Mitigation Fund will be used to pay for the following activities, to be carried out by WDEQ-AQD:

    a. Supplement WDEQ-AQD's existing field inspection staff by adding an inspector dedicated to monitoring compliance in PAPA for a period of 5 years at a cost not to exceed $400,000 for the 5-year period. Thereafter, if continued compliance monitoring in the PAPA is determined to be needed it will be paid out of the Monitoring and Mitigation Fund.

    b. WDEQ-AQD will conduct a formal evaluation of the existing ambient monitoring network in Southwest Wyoming. Based on the results of the evaluation, the Monitoring and Mitigation Fund will provide a funding contribution to WDEQ-AQD not to exceed $1,250,000 over a 5-year period to establish and/or operate monitors recommended by the “network assessment” for pollutants of interest from the PAPA. WDEQ-AQD will, to the extent practicable, use monitor data collected by any new, and all existing local monitors, in performing future air quality modeling. WDEQ-AQD and the Operators will cooperate to collect ambient ammonia data for use in modeling, including modeling to evaluate the adequacy of alternate emission reduction options required under paragraph #4, above.

    c. Supplement WDEQ-AQD's existing capability to analyze and report on ambient monitoring data, by funding an analyst (1) in WDEQ-AQD's monitoring group for a period of 2 years, at a cost not to exceed $160,000 for the two-year period, and (2) providing $200,000 as a contribution to the expected costs of $400,000 to allow WDEQ-AQD to upgrade its ambient air quality data management systems. WDEQ-AQD will agree to use such staff and funds to improve its ability to analyze data to more effectively disseminate those data to the general public and to use ambient monitor data in future air quality modeling associated with the project.

4.1.2 Ozone

To ensure that this project will result in the continued attainment of the Wyoming Ambient Air Quality Standards (WAAQS), within one year of the signing of this ROD, and as needed thereafter, BLM, WDEQ-AQD, and the Operators, with input from EPA, will refine the NO_x and VOC emissions inventory. BLM, in consultation with WDEQ-AQD and EPA, will ensure that new modeling conducted and funded by the Operators, includes all WDEQ BACT requirements and a sensitivity analysis to determine appropriate reductions in ozone precursor emissions. BLM, WDEQ-AQD, in consultation with EPA and the Operators, will evaluate the modeling results.

As soon as possible following evaluation of the modeling results and if needed, the BLM and WDEQ-AQD, in consultation with EPA, will use their respective authorities to implement emission control strategies and/or operating limitations necessary to ensure compliance with applicable ambient air quality standards for ozone. Absent an effective technology to implement, reductions in the pace of development may be utilized to ensure ambient air quality standards are met.

Potential mitigation measures include but are not limited to:

- natural gas-fired drilling rig engines;
- fuel additives;
- gas turbines rather than internal combustion engines for compressors;
- reduction in the number of storage tanks containing VOCs;
- reduction in the number of drilling rigs;
- Tier 2 (or better) equivalent emissions drilling rig engines;
- selective catalytic reduction on drilling rig engines;
- electric drilling rigs;
- electric compression;
- centralization of gathering facilities to reduce truck traffic, including the liquids gathering system;
- cleaner technologies on completion activities, and other ancillary sources;
- advancements in drilling technology; and
- reduction in the pace of development.

Within 2 years of the signing of this ROD, Ultra, Shell, and Questar will install a liquids gathering system to all existing wells. After this 2 year period, all producing wells must be connected to the liquids gathering system prior to production unless waived by the BLM AO.

Within 1 year of the signing of this ROD or at such time as production occurs, all other PAPA operators will be required to demonstrate, and within a subsequent one year period implement, a reduction in VOCs comparable to that obtained by the liquids gathering system as approved by the BLM AO. Installation of a liquids gathering system will meet this requirement. Operators not installing a liquids gathering system must demonstrate a comparable reduction in VOCs.

Within 90 days of the signing of this ROD, and on an annual basis thereafter, until such time as BLM and WDEQ deem it is no longer necessary, individual contingency plans will be developed by the Operators with WDEQ-AQD and BLM to address avoidance of wintertime ozone exceedances. Failure to comply by any individual company will result in BLM withholding approvals for that company and/or reducing the pace of development and/or production.

4.2 GROUNDWATER RESOURCES

Sublette County Conservation district is currently conducting a groundwater monitoring program, funded by the Operators. It is anticipated that this program will continue and may be augmented by results obtained from the activities described below.

The BLM's Regional Framework for Water Resources Monitoring Related to Energy Exploration and Development (Framework) will guide the groundwater monitoring and subsequent identification and implementation of mitigation. The Framework consists of three steps; 1) compilation of existing information, 2) characterization of the groundwater system; and 3) modification of the monitoring plan.

Step 1. Step 1, compilation of existing information, was completed in the *Final Hydrogeological Conceptual Model*, March 2008.

Step 2. Within 3 months of the signing of this ROD, the BLM, the Operators, WDEQ-Water Quality Division (WQD), and EPA, will develop an Interim Groundwater/Aquifer Pollution Prevention, Mitigation and Monitoring Plan and funding strategy to initiate groundwater characterization efforts and augment existing monitoring programs as necessary. This plan will identify mitigation for all potential sources of contamination until a potential source is determined not to be contributing to contamination.

Anticipated costs, to be funded outside of the Monitoring and Mitigation Fund, are shown in Table 1:

Table 1
Anticipated Groundwater Monitoring Costs

Task	Amount
Data Acquisition & Monitoring Network Design	$250,000
Monitoring Network Installation and Initial Sampling	$500,000
Groundwater Monitoring and Reporting	$750,000

A cooperative effort will be initiated which includes technical specialists from BLM and Regulatory Agencies who will work with the Operators to develop the Groundwater Characterization. This will fulfill step 2 of the Framework.

Step 3. Within 6 months of completion of the Groundwater Characterization, technical specialists from BLM and Regulatory Agencies will update the Interim Groundwater/Aquifer Pollution Prevention, Mitigation and Monitoring Plan. The implementation of this plan will be funded by the Operators outside of the Monitoring and Mitigation Fund. Finalization of the Groundwater/Aquifer Pollution Prevention, Mitigation and Monitoring Plan, will complete the third step of the Framework.

Detection of hydrocarbons in industrial water wells is a concern. Potential causes have been identified and mitigation measures have been suggested. BLM will continue to work with the regulatory agencies and the Operators to identify and mitigate potential mechanisms for contamination of water with hydrocarbons. Mitigation, which can be modified through adaptive management will include:

- Operators will provide certification to the BLM, within 6 months of signing of this ROD that back flow prevention devices have been installed on all water supply wells and locked to prevent unauthorized use or access.

- No BLM rights-of-way or other approvals for new industrial water supply wells will be allowed in the PAPA until the Groundwater Characterization is completed and the causes of the hydrocarbon detections have been determined and effectively mitigated.

4.3 GRAZING RESOURCES

Operators have developed a Letter of Commitment that will be followed with a Memorandum of Agreement to address livestock death and injuries, and other projects not funded by the Fund.

4.4 THREATENED AND ENDANGERED SPECIES AND SPECIAL STATUS SPECIES

The USFWS has determined the Colorado pikeminnow, humpback chub, bonytail, and razorback sucker are harmed from the water depletions resulting from implementation of this ROD. The USFWS has established a Recovery Program to mitigate specific project effects on these species. Harm has been specifically identified as: 1) individuals using habitats diminished by the proposed water depletions could be more susceptible to predation and competition from nonnative fish; 2) habitat conditions may be rendered unsuitable for breeding because of reduced flows would impact habitat formulation and maintenance (USFWS, 2008). The USFWS has determined that the depletion impacts resulting from an annual average removal of 479.58 acre-feet per year for activities outlined in this ROD, including well development and pipeline construction, can be offset by: 1) a one-time contribution to the Recovery Program; 2) appropriate legal protection of instream flows pursuant to State law; and 3) accomplishment of activities necessary to recover the endangered fish as specified under the Recovery Implementation Program Recovery Action Plan (USFWS, 1993). Therefore, the Operators are required to make a payment to the Recovery Program of $8,531.73.

The BLM has determined and the USFWS concurred that activities within the PAPA are not likely to adversely affect Ute ladies'-tresses or black-footed ferrets. Continuation of surveys, where appropriate, and identification of any mitigation measures will continue to ensure that the activities within the PAPA are not likely to adversely affect these species.

Based upon the absence of suitable habitat for Canada lynx and Kendall Warm Springs dace, the BLM made a "no effect" determination for these species.

Raptor anti-perching devices within 0.25 mile of prairie dog towns will be installed on all aboveground facilities. Powerlines should be buried near prairie dog towns and placement of power poles within prairie dog towns will be avoided.

4.5 WILDLIFE AND AQUATIC RESOURCES

Extensive measures for the mitigation of impacts to wildlife resources have been included in this ROD through constraints on development and delineation and the liquids gathering system to reduce production-related impacts. For example, the Core Area for DA-5 has been drawn to avoid five key leks as shown on Map 6. A wildlife monitoring plan will be developed by the BLM, WGFD, and the Operators and will be approved by the BLM AO before April 1, 2009.

4.6 OFF-SITE MITIGATION

BLM has determined that some impacts to resources from implementing this ROD (for example, wildlife habitat and vegetation resources) are not likely to be adequately mitigated on site.

Accordingly, the decisions in this ROD are based in part on the commitments of the Operators to fund off-site mitigation.

4.6.1 Monitoring and Mitigation Fund

Recognizing not all impacts can be adequately mitigated on-site, Ultra, Shell, and Questar committed to establish the Pinedale Anticline Operators' Monitoring and Mitigation Fund. Ultra, Shell, and Questar will provide an initial contribution of at least $4.2 million and will make future annual contributions to this Fund of $7,500 per well spud each year on their respective leaseholds. Ultra, Shell and Questar may make advanced contributions to the Fund to implement projects. Such contributions will be credited toward the end of development contributions.

4.6.2 Pinedale Anticline Project Office

In addition to collecting and maintaining monitoring information and analyzing mitigation projects, the PAPO will also serve to coordinate mitigation projects, in a cooperative effort with Wyoming Landscape Conservation Initiative (WLCI) and JIO.

5.0 PUBLIC INVOLVEMENT

5.1 SCOPING

A number of meetings and announcements involving the BLM, the Proponents, various agencies, and the public were held to encourage early and improved public participation and agency cooperation. The BLM's Notice of Intent (NOI) to prepare a Supplemental EIS inviting the public to comment on the Operators' proposal for long-term development of the PAPA appeared in the Federal Register on October 21, 2005. BLM mailed a scoping notice to the media, governmental agencies, environmental organizations, industry representatives, individuals, landowners, and livestock grazing permittees. The scoping notice explained the general nature of the project and requested comments. The formal public scoping comment period ended November 20, 2005. Scoping meetings were held in Jackson and Marbleton on November 7, 2005, and in Pinedale on November 8, 2005.

The locations of the proposed transportation corridor/pipeline alignments were not determined at the time of the initial scoping; therefore, an additional scoping notice was issued. The second notice, mailed on April 14, 2006, was sent to the same recipients as the October 2005 scoping notice, as well as individuals and organizations on mailing lists associated with the BLM Rock Springs and Kemmerer field offices. The formal public comment period for the second scoping notice ended on May 17, 2006.

Numerous concerns were identified in the formal scoping process. Comments received during scoping were incorporated into the analysis in the Draft SEIS published in December 2006. Scoping comments are available for inspection in BLM's Pinedale, Kemmerer and Rock Springs field offices. The agencies and government entities that were consulted in the scoping process include the USFWS, USFS, National Park Service (NPS), EPA, State of Wyoming (including WGFD and WDEQ), Sublette County, and the BLM Interdisciplinary Team (ID Team).

5.2 COMMENT ON DRAFT SEIS

The Draft SEIS (BLM, 2006) was available for public comment in December 2006. The public comment period initially ran for 60 days from December 15, 2006 through February 13, 2007. A Supplemental Ozone Analysis was released in early February 2007, and the public comment period was extended to April 6, 2007. BLM hosted an open house on the Draft SEIS on February 13, 2007 in Pinedale.

Over 63,000 comment letters were received on the Draft SEIS (BLM, 2006) citing various rationales either in support of or in opposition to various Alternatives. The BLM received substantive comments from business and industry representatives; environmental groups; federal, state, and local agencies; and individuals about the Alternatives including many suggestions that additional Alternatives be considered. Based upon these suggestions, the BLM formulated two additional Alternatives and made changes to the Draft SEIS resulting in the Revised Draft SEIS (BLM, 2007). The major changes were:

- The affected environment was updated to include more recent baseline data and to include wellfield development that occurred in 2006;
- Two additional Alternatives (Alternative D and Alternative E) were analyzed;
- Additional Proponent-committed mitigation was included in Alternative D; and

- Additional discussion of impacts to socioeconomic, air quality, and wildlife resources based on a range of drilling rigs operating in the PAPA at any one time was included (Appendix 3, Final SEIS).

5.3 COMMENT ON REVISED DRAFT SEIS

The Revised Draft SEIS (BLM, 2007) was available for public comment in December 2007. BLM received over 68,000 comment letters on the Revised Draft SEIS (BLM, 2007). The public comment period lasted for 45 days and ended on February 11, 2008. BLM hosted public meetings on the Revised Draft SEIS in Pinedale on January 17, 2008 and February 7, 2008. This Final SEIS (BLM, 2008) is the result of revisions based on comments on the Revised Draft SEIS. Reponses to substantive comments during the comment periods are included in the Final SEIS.

5.4 AVAILABILITY OF FINAL SEIS

A Notice of Availability of the Final SEIS (BLM, 2008) was published in the Federal Register on June 27, 2008. Copies of the Final SEIS were made available on the BLM internet as well as at the Pinedale Field Office.

6.0 SUMMARY OF PROPOSED ACTION AND ALTERNATIVES

The Final SEIS (BLM, 2008) analyzed five alternatives. They were:

1. Alternative A No Action Alternative
2. Alternative B Proposed Action Alternative
3. Alternative C
4. Alternative D Preferred Alternative
5. Alternative E Full Field Development with Seasonal Restrictions

6.1 ALTERNATIVE A

The No Action Alternative was based on elements authorized by the PAPA ROD in 2000 and contemplated additional development ending in or around 2011. This alternative would not have allowed for development of the recoverable natural gas resource.

6.2 ALTERNATIVE B PROPOSED ACTION

The Proposed Action included year-round development (construction, drilling, completions, and production) within the PAPA. The Proposed Action Alternative was expected to result in 12,885 acres of new surface disturbance, including well pads, roads, pipelines, and other ancillary facilities within the PAPA. Year-round development would have occurred within a Core Area and there would have been three Concentrated Development Areas. Off-site mitigation was offered at a 3:1ratio for impacts to wildlife habitats that could not be adequately mitigated.

6.3 ALTERNATIVE C

Alternative C was similar to Alternative B in that it included the same project components including up to 4,399 additional wells on up to 12,885 acres of surface disturbance; however, it was spatially different. Rather than only specifying certain areas of development where year-round development could have occurred, Alternative C specified areas where year-round development would not have occurred. It included a Core Area. The overall objective of Alternative C was to control spatial disturbance over time, maximizing development in some areas while minimizing development in other areas, especially in portions of big game crucial winter ranges. Alternative C included five development areas. Year-round development would have been allowed within DAs 1 through 4, but not in DA-5.

6.4 ALTERNATIVE D PREFERRED ALTERNATIVE

Alternative D, the BLM Preferred Alternative, was the result of comments received on the Draft SEIS (BLM, 2006). This Alternative presented a spatially phased development approach, while adding additional measures, including federal suspended and term NSO leases (where no additional development will occur for at least the first 5 years) in the Flanks. Alternative D included additional air mitigation to further reduce visibility impacts at the nearby Bridger Wilderness Area. An adaptive management approach and a compensatory mitigation fund were elements of Alternative D.

6.5 ALTERNATIVE E

Alternative E, also the result of comments received on the Draft SEIS (BLM, 2006), analyzed seasonal habitat restrictions remaining in effect. This Alternative reflected a development approach similar to that considered in the PAPA ROD (BLM, 2000), while providing for full field development of the natural gas resource. Limits on active well pads and acres of surface disturbance were included.

6.6 ALTERNATIVES CONSIDERED AND ELIMINATED FROM DETAILED ANALYSIS

Elements of Alternatives identified as not analyzed in detail in the Final SEIS (BLM, 2008) were the Conservation Alternative, the Maximum Development Alternative, and the Reduced Pace of Development Alternative. Rational for not analyzing these in detail is provided in the Final SEIS.

6.7 ENVIRONMENTALLY PREFERRED ALTERNATIVE

In accordance with Council on Environmental Quality (CEQ) regulations (40 CFR 1505.2(b)), the environmentally preferred alternative must be identified in the ROD.

BLM considers the environmentally preferred alternative to be Alternative A, the No Action Alternative, as analyzed with development ending in or around 2011. As analyzed, this alternative will result in the shortest length of development and the impacts associated with production are anticipated to be the least. However, the No Action Alternative will fail to effectively recover nearly 16 trillion cubic feet of natural gas resource and will not meet the purpose and need.

7.0 APPROVED PROJECT COMPONENTS

This ROD provides the BLM AO approval to permit the following project components on BLM-administered federal lands and minerals subject to the constraints in this ROD. Development beyond the specified levels will require additional environmental analysis.

A summary of all approved project components is presented in Table 2.

Table 2
Estimated Initial and Life-of-Project Disturbance of Approved Project Components

Component	Number or Miles	Initial Disturbance (acres)	Life-of-Project Disturbance (acres)
Well Pads, Roads and Gas Gathering Pipelines			
Well Pads[1]	Approximately 250 new well pads, 600 total	8,113.0	3,245.2
Local and Resource Roads[2]	100 miles	606.0	484.8
Gas Gathering Pipelines[3]	100 miles	303.0	0.0
Liquids Gathering Pipelines[4]	471 miles	2,854.7	0.0
Subtotal		**11,876.7**	**3,730.0**
Trunk Pipelines and Ancillary Facilities			
30- to 42-inch Mesa Loop Lines[5]	15.3 miles	370.9	1.0
8-inch water line[6]	18.0 miles	109.1	0.5
12-inch liquids pipelines[7]	7.8 miles	47.3	0.5
Trunk lines – liquids gathering[8]	18 miles	163.6	0.5
Water Redistribution[4]	6 miles	36.0	0.5
Pipeline Interconnection	0.5 mile	3.0	0.5
Compressor Sites (expansion)	3 sites	110.0	110.0
Central Gathering Facilities	9 sites	90.0	90.0
Central Gathering Facilities	6 sites	12.0	12.0
Falcon Stabilizer Facility	1 site	20.0	20.0
Water Trucking Facility	1 site	20.0	20.0
Water Trucking Facility	1 site	7.0	7.0
Falcon Truck Unloading	1 site	15.0	15.0
Expand Stabilizer Site	1 site	5.0	5.0
Subtotal		**1,008.9**	**282.5**
Total Wellfield Components		**12,885.6**	**4,012.5**

[1] Disturbance includes new well pads and expansion of existing well pads. LOP disturbance assumes 60 percent reclamation of well pads.
[2] Assumes no new collector roads will be built within the PAPA, assumes 0.4 mile of road per new pad with a construction right-of-way of 50 feet. LOP disturbance assumes 20 percent reclamation of roads.
[3] Assumes 0.4 mile of gas gathering pipeline per new well pad with a construction right-of-way of 25 feet.
[4] Estimate for miles of proposed liquids gathering pipelines is based on data provided by the Proponents.
[5] Disturbance is based on 200-foot construction right-of-way width. Includes two co-located 30- to 42-inch gas pipelines from Stewart Point to Pinedale/Gobblers Knob Compressor Station. Includes 30.6 miles of pipeline but because they are co-located, 200-foot construction right-of-way is 15.3 miles. The two pipelines will be built at separate times.
[6] Disturbance is based on 50-foot construction right-of-way width from Stewart Point area to Highway 351.
[7] Disturbance is based 50-foot construction right-of-way width. Includes one 12-inch crude petroleum pipeline and one water pipeline from 4-way area to Paradise Compressor Station.
[8] Disturbance is based on 75-foot construction right-of-way width.

7.1 WELL PADS

Six hundred (600) well pads within the PAPA on all lands and minerals, including well pads located on private and state lands, are authorized. Once this limit is reached, no additional well pads will be authorized until either 1) additional environmental analysis is completed or 2) well pads are reclaimed to full bond release status. Well pads reclaimed to full bond release status will not count against the 600 well pad limit or against the MA limits.

The Final SEIS analysis demonstrates notable benefit from the systematic development of the oil and gas resource afforded through year-round development within the Core Area and PDA. To adequately capture this benefit, it is BLM's intent to implement a concept of enabling Operators to stay on a well pad until that pad is completely drilled out; so long as the "drill out" complies with all applicable laws and regulations, including, but not limited to the ESA, BGEPA, and MBTA. Once areas have been cleared for development at the annual planning meeting (decision portion) monitoring, mitigation, and if needed, deterrence measures within limits identified above will be employed to ensure that "once on a pad; stay on the pad" concept can be successfully implemented.

7.2 PIPELINES

Pipeline Corridors. The BLM approves the designation of three pipeline corridors to support construction and operation of future pipelines for transport of natural gas-related production (natural gas, crude petroleum, and produced water) from the PAPA (see Map 2.4-1 in the Final SEIS). The corridors will mostly parallel, and be located adjacent to, existing pipeline corridors connecting the PAPA with natural gas processing plants in southwest Wyoming. The BLM has determined the need for such corridors based on:

- Continued success in the development of natural gas resources in the PAPA;
- Indications, initial plans, and actual proposals by industry for the construction and operation of additional pipeline capacity to transport the increasing volumes of natural gas and other hydrocarbon products from the PAPA and Jonah Field Project Area to market;
- An agency determination that the existing pipeline corridors are full; and
- Provisions of the 2005 Energy Policy Act encouraging location of pipelines in common corridors and providing for expedited NEPA approvals.

The proposed pipeline corridors are discussed below:

1. The 500-foot wide, 41.5-mile long Bird Canyon Corridor (BCC) is mostly parallel and be adjacent to the existing 200-foot wide pipeline corridor between the PAPA (Pinedale/Gobblers Knob and Paradise compressor stations, Section 2, T. 31 N., R. 109 W.) and the Bird Canyon Compressor Station (Section 34, T. 27 N., R. 111 W.)
2. The 300-foot wide, 62.1-mile long Blacks Fork Granger Corridor (BFGC) is mostly parallel and be adjacent to the existing 200-foot wide pipeline corridor between the Bird Canyon Compressor Station and the Blacks Fork Gas Processing Plant (Section 10, T. 18 N., R. 112 W.) with an intermediate connection into the Granger Gas Processing Plant (Section 16, T. 18 N., R. 111 W.).
3. The 300-foot wide, 45.5-mile long Opal Pioneer Corridor (OPC) is mostly parallel and adjacent to the existing 200-foot wide pipeline corridor between the Bird Canyon Compressor Station and the Opal Gas Processing Plant (Section 27, T. 21 N., R. 114 W.) with an intermediate connection into the Pioneer Gas Processing Plant (Section 22, T. 21 N., R. 114 W.).

Of the 41.5 miles of proposed BCC between the adjacent Pinedale/Gobblers Knob and Paradise compressor stations and the Bird Canyon Compressor Station, approximately 20.2 miles will be located away from the boundary of the existing pipeline corridor. Approximately 18.8 miles of the 20.2 miles will be located on BLM-administered public lands.

Approximately 1.8 miles (0.8 mile of federal lands) of the 300-foot wide, 62.1-mile long BFGC between Bird Canyon Compressor Station and the Blacks Fork Gas Plant will be located away from the boundary of the existing pipeline corridor. The location of the proposed 300-foot wide, 45.5-mile long OPC between the Bird Canyon Compressor Station and the Opal Gas Processing Plant will be adjacent to an existing corridor for its entire length.

Gas Sales Pipelines. Approved gas sales pipelines are presented in Table 3. Rendezvous Gas Services (RGS) proposed to construct a 103.6-mile long, 30-inch diameter, natural gas pipeline (Rendezvous Phase VII or RVII Pipeline) within the proposed BCC and BFGC to transport natural gas produced in the PAPA to gas processing plants. Segment 1 of the proposed RVII Pipeline (41.5 miles) will be located in the BCC, beginning at the Pinedale/Gobblers Knob Compressor Station and ending at the Bird Canyon Compressor Station (see description of the BCC above). Segment 2 of the proposed RVII Pipeline (62.1 miles) will begin at the Bird Canyon Compressor Station and end at the Blacks Fork Processing Plant (see description of the BFGC above). It is anticipated that the RVII Pipeline will be constructed after 2008.

Table 3
Estimated Initial and Life-of-Project Disturbance
for Approved Gas Sales Pipelines

Component	Number or Miles	Total Disturbance (acres)	Life-of-Project Disturbance (acres)
30-inch RVII Pipeline[1]	103.6 miles	1,506.9	1.0
RVII temporary extra work areas[2]	168 sites	23.3	0.0
RVII temporary extra work areas – HDDs[3]	4 sites	8.3	0.0
Subtotal		**1,538.5**	**1.0**
36-inch PBC Pipeline[1]	41.5 miles	603.6	1.0
PBC temporary extra work areas[2]		9.4	0.0
PBC temporary extra work areas – HDDs[3]	2 sites	4.2	0.0
Subtotal		**617.2**	**1.0**
30-inch Opal Loop III Pipeline[1]	45.5 miles	661.8	10
Opal Loop III temporary extra work areas[2]		10.5	0.0
Subtotal		**672.3**	**1.0**

[1] Disturbance based on 120 foot construction right of way width.
[2] Temporary extra work areas are required for road, foreign line, historic trail, and waterbody crossings.
[3] Horizontal directional drills.
[4] Granger Gas Processing Plant analyzed for air quality impacts only.

Jonah Gas Gathering Company (JGGC) proposed to construct a 41.5-mile long, 36-inch natural gas pipeline (Paradise to Bird Canyon or PBC Pipeline) and a connecting 45.5-mile long, 30-inch pipeline (Opal Loop III Pipeline) to transport natural gas from the PAPA to gas processing plants (see Map 2.4-1 in the Final SEIS). The PBC Pipeline will be located in the BCC and will parallel Segment 1 of the RVII Pipeline. The Opal Loop III Pipeline will be located in the OPC and will parallel the Bridger Pipeline that was constructed in 2006. It is anticipated that the PBC and Opal Loop III pipelines will be constructed after 2008.

The proposed RVII Pipeline (segments 1 and 2) and the PBC and Opal Loop III pipeline projects will include construction of ancillary facilities (valves, pigging equipment, side taps, and metering equipment).

Trunk Pipelines. Questar Gas Management (QGM) proposed to install two 15.3-mile long, 30- to 42-inch gas pipelines from the Stewart Point Area to the Pinedale Gobblers Knob Compressor Station along existing rights-of-way. Initial disturbance requires 370.9 acres (200-foot construction right-of-way) adjacent to, or within, existing rights-of-way for most of the route. QGM also proposed to install an 18-mile long, 8-inch water line from the Stewart Point area to Highway 351. This requires an initial disturbance of 109.1 acres (50-foot construction right-of-way) adjacent to, or within, existing rights-of-way for most of the route.

JGGC also proposed to install two 7.8-mile long, 12-inch liquids pipelines from the 4-way area to the Paradise Compressor Station, with an initial disturbance of 47.3 acres (assuming a 50-foot construction right-of-way). This disturbance will occur adjacent to or within existing rights-of-way for most of the route.

JGGC also proposed to install an 18-mile long liquids trunk line (163.6 acres), 6 miles of water redistribution pipelines (36.0 acres), and a 0.5-mile pipeline interconnection (3.0 acres) in support of the new liquids gathering system.

7.3 ANCILLARY FACILITIES

Expansion of existing and construction of new ancillary facilities, including compressor stations, central gathering facilities (CGFs), stabilizer sites, and water truck unloading facilities, are described below.

Compressor Stations. QGM and JGGC proposed expansion of three compressor stations in the PAPA and one compressor station outside of the PAPA (Bird Canyon Compressor Station) before 2011 (see Table 4). The expansions include an additional 267,038 hp of compression, with additional LOP disturbance of 90 acres within the PAPA. These compressor stations are subject to the emission reductions previously discussed in this decision. QGM also proposed to install an additional 15,500 hp of compression which will require an additional 20 acres of disturbance at the Pinedale/Gobblers Knob Compressor Station in 2015, resulting in a combined total of 282,538 hp of new compression and 110 acres of disturbance, all to be located at existing compressor stations.

Table 4
Approved Compressor Station Expansions

Compressor Station Name	Field	Owner	Location	Additional Compression (hp)	Additional Disturbance (acres)
Pinedale/Gobblers Knob	PAPA	QGM	Section 2, T. 31 N., R. 109 W.	31,000 (2009)	20
Paradise	PAPA	JGCC	Section 2, T. 31 N., R. 109 W.	59,000 (2011) 125,000 (2015)	40
Falcon	PAPA	JGCC	Section 36, T. 30 N., R. 108 W.	7,366 (2011) 30,000 (2015)	30
Bird Canyon	SE of Jonah	JGCC	Section 34 T. 27 N., R. 111 W.	14,672 (2011)	0
Total				**267,038**	**90**

Central Gathering Facilities. QGM proposed six additional CGFs (formerly known as central delivery points) to support their existing liquids gathering system. Each CGF will require an additional 2 acres of disturbance for a LOP disturbance of 12 acres.

JGGC also proposed to construct nine CGFs in support of the liquids gathering system within leases currently held by Shell and Ultra. The CGFs require 10 acres each, for a total initial and life-of-project (LOP) disturbance of 90 acres.

Stabilizer Facilities. QGM proposed to expand the stabilizer site near the Pinedale/Gobblers Knob Compressor Station in support of their existing liquids gathering system. This expansion will require an additional LOP disturbance of 5 acres.

In support of the new liquids gathering system, JGGC proposed to build a stabilizer facility at the Falcon Compressor Station that will require an additional 20 acres of initial and LOP disturbance. The purpose of the stabilizer is to make a "stable" product (crude petroleum) that can be metered, and it then will be sent to the pipeline for transport off the PAPA.

Water Truck Unloading Facilities. QGM proposed to install truck unloading facilities near Highway 351 in the PAPA in support of their existing liquids gathering system. QGM's water trucking facility will require a LOP disturbance of 7 acres. QGM proposed an additional truck unloading facility at the Falcon Compressor Station that will require an additional LOP disturbance of 15 acres.

JGGC also proposed to install truck unloading facilities near Highway 351. This will require an initial and LOP disturbance of 20 acres.

8.0 REFERENCES

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APPENDIX A

BLM's Practices and Restrictions for the Pinedale Anticline Project Area

BLM's Practices and Restrictions for the Pinedale Anticline Project Area

These Practices and Restrictions for the Pinedale Anticline Project Area are available for application for APDs and rights-of-way during the site-specific review where necessary. This appendix is not an exhaustive list of all the restrictions BLM may impose on operations to reduce or eliminate impacts. These are subject to modification through adaptive management.

Surveys listed in this appendix will be used to determine resource presence or absence. The results of these surveys will be used to make decisions on pad placement. Once a pad has been approved at that annual planning meeting, additional surveys/clearances will not be required for each APD drilled on that pad. This in no means implies that monitoring will not occur.

All approved actions within the PAPA may include all or some of the following Conditions of Approval (COAs), administrative requirements, mitigation requirements, and/or Best Management Practices (BMPs).

PAPA operators are responsible for adhering to all applicable federal, state, and local laws and/or regulations and for obtaining all necessary federal, state and county permits. Absent specific revision in this ROD, operators will comply with the management objectives, COAs, and mitigation measures identified in the BLM Pinedale RMP (BLM 1988) to the extent feasible and practicable.

Operations within the Pipeline Corridor will comply with the Pinedale RMP (BLM 1988), the Green River RMP (BLM, 1997), and the Kemmerer RMP (BLM, 1986) to the extent feasible and practicable.

The following are available for application to APDs and right-of-ways during the site-specific review, where necessary. This appendix is not an exhaustive list of all the restrictions BLM may impose on operations to reduce or eliminate impacts, but BLM finds that those listed are reasonable in light of impacts identified and consistent with the rights granted in BLM leases. These are subject to modification through adaptive management and are also subject to exception as outlined in the BLM RMP (BLM, 1988) and Appendix A-6 of the PAPA ROD (BLM, 2000).

Surveys listed in this appendix will be used to determine resource absence or presence. The result of these surveys will be used to make decisions on pad placement once a pad has been approved at the annual planning meeting. Ongoing annual monitoring will be used to determine whether additional clearances will be required.

A.1 General Requirements

Proposed project development will require the appropriate level of environmental review in accordance with applicable federal, state, and local regulations.

Removal and disturbance of vegetation will be kept to a minimum through construction site management (e.g., using previously disturbed areas and existing easements, limiting equipment/materials storage yard and staging area size, etc.).

Where necessary, areas to be disturbed will require inventories or special studies to determine the extent of site-specific impacts and appropriate mitigation. Operators will be required to complete inventories or short-term special studies under guidelines provided by the BLM or as developed through the AM planning process.

There will be no well location or production facility surface occupancy within 0.25 miles of an occupied dwelling to prevent damage to human health and safety and/or other resources. Any surface use or occupancy within such special areas will be strictly controlled or, if absolutely necessary, prohibited.

No surface disturbance is recommended on slopes in excess of 25 percent unless erosion controls can be ensured and adequate revegetation is expected. Engineering proposals and revegetation and restoration plans will be required in these areas.

Unnecessary topographic alterations will be mitigated by avoiding, where possible, steep slopes, rugged topography, and perennial and ephemeral/intermittent drainages, and by minimizing the area disturbed. Alternative methods of construction in order to minimize environmental impacts may also be used.

A.2 Project Citing and Operation

In conformance with Onshore Oil and Gas Order No. 1, Operators will prepare and submit individual comprehensive drill site design plans, or Master Development Plans, for BLM approval. These plans will show the drill location layout over the existing topography, dimension of the location, volumes and cross sections of cut and fill, location and dimensions of reserve pits, existing drainage patterns, and access road egress and ingress. Plans will be submitted and approved prior to initiation of construction.

Prior to the onset of drilling, a "stock tight" fence will be installed on three sides of the reserve pit. This fence will be woven wire at least 28 inches high and within 4 inches of ground surface with two strands of barbed wire above the woven wire with 10-inch spacing. The fence corners will be double H-brace panels constructed with treated wood corner posts or steel pipe posts of at least 4-inch outside diameter (see Gold Book pgs 16-18). The corner brace posts will securely set a minimum of 30 inches in the ground. Metal T-posts are not allowed for corner panel construction, but may be used between corner panels. The fourth side of the reserve pit will be fenced after the drilling rig moves off the location. The fence will be located a maximum of 5 feet from the edge of the reserve pit. The double H-braces will be used on all corners of the pit area. The Operator will implement measures to prevent wildlife and livestock from entering the reserve area during drilling and well completion operations before the fourth side of the fence has been constructed.

Due to the location of the PAPA within the Colorado River Basin, all reserve pits must be lined. Reserve pit liners must have a mullen burst strength that is equal to or exceeds 300 pounds, a puncture strength that is equal to or exceeds 160 pounds, and grab tensile strengths that are equal to or exceed 150 pounds. There will be verified test results conducted according to ASTM test standards. The liner must be totally resistant to deterioration by hydrocarbons.

Liners must be installed over smooth fill subgrade which is free of pockets, loose rocks, or other materials which could damage the liner. Sand, sifted dirt, or bentonite is suggested.

Reserve pit slope will not exceed 1:1.

Procedures for use of oil-based mud should be environmentally acceptable.

All oil-based mud drilling operations will be completed through a closed mud system and all oil-based mud will be contained in the closed system.

The closed drilling system will be equipped with appropriate drip pans, liners and catchments under probable leak sources as needed to prevent the oil-based drilling mud and cuttings from reaching the reserve pit and/or ground surface of the drill pad.

Any cuttings dropped or mud spilled will be immediately cleaned up and placed in the approved containment device. All spills in excess of one barrel outside the containment devices will be reported to the BLM within 8 hours.

All blow-out preventer equipment and all elastomers in the mud system will be suitable for oil based mud.

Well control training of all crews on rigs utilizing oil-based muds will include coverage of the additional hazards associated with oil-based muds.

The Operator will exercise extreme caution to avoid discharging oil-based drilling mud into the reserve pit. Should an event occur where it is necessary for oil-based mud to be discharged to the reserve pit, the Operator will immediately initiate the following actions:

- The reserve pit will be secured to prevent birds and other wildlife from getting into the oil contaminated cuttings, fluids, and mud.
- The Operator will submit a plan to the BLM-PFO describing how the contaminated pit will be managed (i.e., will the contaminated material/fluids be treated in place, and if so by what method; or will the contaminants be removed to a WDEQ-approved disposal facility).

Submit a Sundry Notice describing how the oil contaminated drill cuttings will be treated to assure the oil stays contained in the cuttings and where the cuttings will be ultimately be stored (i.e., buried in the flare pit, buried in a separate "on-location" pit, or removed to a WDEQ-approved disposal site. On-location disposal sites for oil contaminated drill cuttings will be lined with a 12 mil or stronger impervious liner compatible with oils. A liner meeting this specification will also be placed under any temporary storage area for the oil contaminated cuttings.

Prior to skidding or moving the drill rig to another well or well pad, the pumps, pump lines and tanks will be cleaned to insure that no oil-based mud is in the system during surface drilling operations of the new well.

Install and maintain siphons, catchments, and absorbent pads to keep hydrocarbons produced by the drill rig from entering the reserve pit. Ensure that hydrocarbons and contaminated pads are disposed of in accordance with WDEQ requirements.

If drilling fluids are transferred from this well to the next well in the drilling plan, then the fluids will be tested at the well logging stage of drilling operations using WDEQ Guideline 8 parameters. This water analysis standard is incorporated in a packet submitted by Western Environmental Services and Testing Inc. as part of their water analysis packages. Any other company doing water testing will also have to test for the elements listed in the WDEQ Guideline 8 parameters.

Operators will construct reserve pits with 2 feet of freeboard in cut areas or in compacted and stabilized fill. Reserve pits will not be located in areas where groundwater is less than 50 feet from the surface. A closed system will be required if water shows in the rat or mouse hole.

Produced water from oil and gas operations will be disposed of in accordance with the requirements of Onshore Oil and Gas Order No. 7.

Any pits with harmful fluids in them will be maintained in a manner that will prevent migratory bird mortality.

Any drilling fluids pit that shows indications of containing hazardous wastes will be tested for the Toxicity Characteristic Leaching Procedure constituents. If analysis proves positive, the fluids will be disposed of in an approved manner. The cost of the testing and disposal will be borne by the potentially responsible party.

Wells, pipelines, and ancillary facilities will be designed and constructed such that they will not be damaged by moderate earthquakes. Any facilities defined as critical according to the Uniform Building Code will be constructed in accordance with applicable Uniform Building Code Standards for Seismic Risk Zone 2B.

Before conducting any reserve pit evaporation, by means other than natural evaporation, the Operator will submit a Sundry Notice for AO approval. The Sundry Notice will provide a detailed description of the drying method. The Operator is also required to obtain authorization from the WOGCC for pit fluid treatment by means other than natural evaporation.

Sewage disposal facilities will be in accordance with state and local regulations.

Trash will be contained in a portable covered trash cage. The trash cage will be emptied in a WDEQ approved sanitary landfill. BLM prohibits littering.

Slope, grade, and other construction control stakes (e.g., exterior boundary centerline, etc.) will be placed, as necessary, to ensure construction in accordance with the surface use plan. The cut and fill slopes and spoil storage areas will be marked with a stake and/or lath at a minimum of 50-foot intervals. The tops of the stakes or laths will be painted or flagged in a distinctive color. All boundary stakes and/or laths will be maintained in place until final construction cleanup is completed. If stakes are disturbed, they will be replaced before proceeding with construction.

Drilling, well completion, and workover lights will be shrouded and directed on to the drilling platform and/or well pad, to the extent allowed by safety requirements, so that lights/glare are not directed away from the well pad.

The Operator will be required to notify the BLM via a website (http://www.blm.gov/wy/st/en/field_offices/Pinedale/oil_gas.html) no earlier than 15 days and no later than 3 working days prior to commencement of the well pad or access road construction activities. Notification will also be made via the same website at least 24 hours before well spudding and a written sundry notice of the well spud must be submitted within 5 working days.

Notification will also be made via the same website at least 24 hours before well spudding and a written sundry notice of the well spud must be submitted within 5 working days.

Construction under adverse conditions may require additional mitigation measures.

A.3 Soil, Erosion, and Sediment Control

Prudent use of erosion control measures, including diversion terraces, riprap, matting, temporary sediment traps, and water bars will be employed as necessary. These erosion control measures will be used as appropriate to control surface runoff generated at well locations. The type and location of sediment control structure, including construction methods, will be described in APD and ROW plans. If necessary, to reduce suspended sediment loads and remove potential contaminants, Operators may treat diverted water in detention ponds prior to release to meet applicable state or federal standards.

Best Management Practices (BMP's) will be required to control sediment from all construction sites. Because of concerns regarding potential sediment impacts to the New Fork and Green rivers, BLM will require Operators to provide more detailed plans, with their APD and/or right-of-way application, for erosion control, revegetation, and restoration on sites within 1 mile of the Green and New Fork rivers. These plans will be required prior to initiating any construction activities.

Before a surface disturbing activity is authorized, topsoil depth will be determined. The amount of topsoil to be removed, along with topsoil placement areas, will be specified in the authorization. The uniform distribution of topsoil over the area to be reclaimed will be required, unless conditions warrant a varying depth. On large surface-disturbing projects (e.g., gas processing plants) topsoil will be stockpiled and seeded to reduce erosion. Where feasible, topsoil stockpiles will be designed to maximize surface area to reduce impacts to soil microorganisms. Stockpiles remaining less than 2 years are best for soil micro-organism survival and native seed viability.

Emphasis will be placed on the reduction of soil erosion and sediment into the Green River Basin watershed. Of particular importance will be those areas with saline soils or those areas with highly erodible soils. Critical erosion condition areas will continue to be identified during soil surveys, monitoring, site specific project analysis, and activity plan development for the purpose of avoidance and special management.

Operators will avoid adverse impacts to soils by:

- minimizing disturbance, avoiding construction with frozen soil material,
- avoiding areas with high erosion potential (e.g., unstable soil, dunal areas, slopes greater than 25%, floodplains), where possible,
- salvaging and selectively handling topsoil from disturbed areas,
- adequately protecting stockpiled topsoil and replacing it on the surface during reclamation,
- leaving the soil intact (scalping only) during pipeline construction, where possible,
- using appropriate erosion and sedimentation control techniques including, but not limited to, diversion terraces, riprap, and matting,
- promptly revegetating disturbed areas using adapted species,
- applying temporary erosion control measures such as temporary vegetation cover,
- applying biodegradable mulch, netting, or soil stabilizers, and
- construction of barriers as appropriate in certain areas to minimize wind and water erosion and sedimentation prior to vegetation establishment.

Management of the soil resource will continue to be based upon the following: 1) Evaluation and interpretation of soils in relation to project design and development; 2) Identification and inventory of soils for baseline data; and 3) Identification and implementation of methods to reduce accelerated erosion.

Evaluation and interpretation involves identification of soil properties which will influence their use and recommendations for development while minimizing soil loss. Projects will be examined on a site-specific basis, evaluating the potential for soil loss and the compatibility of soil properties with project design. Stipulations and mitigating measures are provided on a case-by-case basis to ensure soil conservation and practical management. Projects requiring soil interpretations include: construction of linear right-of-way facilities (i.e., pipelines, roads, railroads, and power transmission lines); construction of water impoundments; rangeland

manipulation through fire or mechanical treatments; construction of plant site facilities, pump stations, well pads and associated disturbances; and reclamation projects.

BLM will require each individual right-of-way, APD or other application to include a reclamation plan approved by the BLM. Each Master Development Plan for projects which cumulatively disturb more than 10 acres will be required to submit an Erosion, Revegetation and Restoration Plan (ERRP) consistent with BLM guidance. Prior to new disturbance, ERRP's will be approved by the BLM AO. Operators will utilize existing disturbance where possible for field operations including but not limited to drilling, completions, and/or production operations. Each Operator will be required to supply in January and June of each year data indicative of well pad status including but not limited to new construction, expansion, and/or reclamation. Disturbance data submissions will be in conformance with the standards set forth through the JIO.

A.4 Roads

The Operator will regularly maintain all lease roads in a safe, usable condition. A regular maintenance program will include, but not be limited to, blading, ditching, culvert installation, drainage installation, surfacing, and cattleguards, as needed. Design, construction, and maintenance of the road will be in compliance with the standards contained in BLM Manual, Section 9113 (Roads), and in the latest version of the "Gold Book," Oil and Gas Surface Operating Standards for Oil and Gas Exploration and Development.

At the discretion of the BLM AO, road construction may be required to be monitored by a qualified individual agreed to by the BLM AO and the Operator. A certified civil engineer is to submit a statement that the road was built as designed within 15 days after the road has been constructed. Compaction of the subgrade with water and heavy equipment to a density higher than the surrounding subsurface is required during construction.

Project-related travel will be limited to only that necessary for efficient project operation during periods when soils are saturated and excessive rutting could occur.

Roads will be constructed as described in BLM Manual 9113. New main artery roads will be designed to reduce sediment, salt, and phosphate loading to the Green and New Fork rivers. Where necessary, running surfaces of the roads will be graveled if the base does not already contain sufficient aggregate.

Where deemed necessary and effective by the BLM AO, locked gates will be installed on oil field roads (with structures added to prevent drive-arounds) to reduce traffic and protect other resources (e.g., wildlife, cultural resources, etc.) from impacts caused by increased vehicle traffic and human presence. The need and location of locked gates will be determined during the transportation planning process. The selective use of locked gates, where practicable, could be used to protect any significant cultural sites found during inventories. This approach is more commonly used as a seasonal restriction to protect wildlife during winter months, but some applications may also present themselves from a cultural resources standpoint.

To control or reduce sediment from roads, guidance involving proper road placement and buffer strips to stream channels, graveling, proper drainage, seasonal closure, and in some cases, redesign or closure of old roads will be developed when necessary. Construction may also be prohibited during periods when soil material is saturated, frozen, or when watershed damage is likely to occur. BLM will require in-use roads to be redesigned or closed when unnecessary or undue environmental impacts (such as sedimentation) have not been alleviated through use of other mitigations and where the detrimental impacts of the existing road outweighs the impacts associated with new surface disturbance to rebuild the road.

Available topsoil will be stripped from all road corridors prior to commencement of construction activities and will be redistributed and reseeded on backslope areas of the borrow ditch after completion of road construction activities. Borrow ditches will be reseeded in the first appropriate season after initial disturbance.

On newly constructed roads and permanent roads, the placement of topsoil, seeding, and stabilization will be required on all cut and fill slopes unless conditions prohibit this (e.g., rock). No unnecessary side-casting of material (e.g., maintenance) on steep slopes will be allowed. Snow removal plans may be required so that snow removal does not adversely affect reclamation efforts or resources adjacent to the road.

Reclamation of abandoned roads will include requirements for reshaping, recontouring, resurfacing with topsoil, installation of water bars, and seeding on the contour. Road beds, well pads, and other compacted areas will be ripped to a depth of two feet on 1.5 foot centers to reduce compaction prior to spreading the topsoil across the disturbed area. Stripped vegetation will be spread over the disturbance for nutrient recycling, where practical. Fertilization or fencing of these disturbances will not normally be required. Additional erosion control measures (e.g., fiber matting) and road barriers to discourage travel may be required. As deemed necessary by the BLM AO, graveled roads, well pads, and other sites will be stripped of usable gravel and hauled to new construction sites prior to ripping. The removal of structures such as bridges, culverts, cattleguards, and signs usually will be required.

Main artery roads, regardless of primary user, will be crowned, ditched, drained, and, if deemed appropriate by the BLM AO, surfaced with gravel to reduce sediment, salt, and phosphate loading to the Green and/or New Fork Rivers.

Road closures may be implemented during crucial periods (e.g., wildlife winter periods, spring runoff, and calving and fawning seasons, saturated soil conditions).

Individual road design plans for new and/or improved roads will be submitted for approval as components of APDs or ROW permits. Plans must be approved prior to initiation of work. Operators will schedule a review of plans with sufficient time to obtain BLM approval prior to commencement of work.

Existing roads will be used to the maximum extent possible and upgraded as necessary.

Operators will comply with existing federal, state, and county requirements and restrictions to protect road networks and the traveling public.

All development activities along approved ROWs will be restricted to areas authorized in the approved ROW.

Roads and pipelines will be located adjacent to existing linear facilities wherever practical.

As deemed necessary by the BLM AO, Operators and/or their contractors will post appropriate warning signs and require project vehicles to adhere to appropriate speed limits on project-required roads.

The application of produced water on roads for use in dust suppression activities will not be allowed unless total dissolved solids (TDS) are less than 400 mg/l (state standard for the Colorado River drainage) and the water does not contain hazardous material. No produced water will be allowed on roads in Sublette County without an approved permit issued by the WDEQ and authorization granted by the BLM.

A.5 Production Facilities

All storage tank batteries, including drain sumps and sludge holdings at compressor facilities, installed on location and designed to contain any oil, glycol, produced water, or other fluid which may constitute a hazard to public health or safety, will be surrounded by a secondary means of containment for the entire contents of the largest single tank in use plus one foot of freeboard for precipitation or 110 percent of the capacity of the largest vessel. The appropriate containment and/or diversionary structures or equipment, including walls and floor, to prevent discharged fluid from reaching ground, surface, or navigable waters, will be impervious to any oil, glycol, produced water, or other fluid for 72 hours and will be constructed so that any discharge from a primary containment system, such as a tank or pipe, will not drain, infiltrate, or otherwise escape to ground, surface, or navigable waters before cleanup is completed.

Treaters, dehydrators and other production facilities installed on location, that have the potential to leak or spill oil, glycol, produced water, or other fluid which may constitute a hazard to public health or safety, will be placed on or within appropriate containment and/or diversionary structure to prevent spilled or leaking fluid from reaching ground, surface, or navigable waters. The appropriate containment and/or diversionary structure will be sufficiently impervious to oil, glycol, produced water, or other fluid and will be installed so that any spill or leakage, will not drain, infiltrate, or otherwise escape to ground, surface, or navigable waters before cleanup is completed.

All above ground permanent structures (permanent means on-site for longer than 90 days) not subject to safety requirements will be painted by the Operator to blend with the natural color of the landscape. New production facilities will be painted a non-contrasting color which is harmonious with the surrounding landscape as specified and approved by the BLM on a case-specific basis.

Stream sediment, phosphate, and salinity load will be reduced where possible. In areas where ground water exists 50 feet or less from the surface (WOGCC), produced water from oil and gas operations will be disposed of in an approved closed storage system or by other acceptable means complying with Onshore Order No.7.

Where depth to groundwater is less than 100 feet and soil permeability is more than 0.1 foot/day, plants, mills, or associated tailings ponds and sewage lagoons will not be allowed.

Proper containment of oil and produced water in tanks, drilling fluids in reserve pits, as well as locating staging areas for storage of equipment away from drainages will prevent potential contaminants from entering surface waters.

All new production facilities construction which has open-vent exhaust stacks will be equipped to prevent bird and bat entry or perching on the stack.

A sundry notice must be submitted and approved prior to any pit closures or reclamation work.

In the event that any hydrocarbon material is released into the reserve or production pits, it will be removed within seven (7) days of the discharge event.

All secondary containment structures specifically used for methanol containment will be designed so as to prevent bird, animal, or livestock entry.

A.6 Pipelines

Channel crossings by pipelines will be constructed so that the pipe is buried at a depth sufficient to ensure the pipeline does not become exposed as dictated by site specific conditions.

Channel crossings by roads and pipelines will be constructed perpendicular to flow. Streams/channels crossed by roads will have culverts installed at all appropriate locations as specified in the BLM Manual 9112-Bridges and Major Culverts (BLM 1990) and Manual 9113-Roads (BLM 1985) Streams will be crossed perpendicular to flow, where possible, and all stream crossing structures will be designed to carry the 25-year discharge event or other capacities as directed by the BLM.

Operators or pipeline contractors will comply with state and federal regulations for water discharged into an established drainage channel. The rate of discharge will not exceed the capacity of the channel to convey the increased flow. Waters that do not meet applicable state or federal standards will be evaporated, treated, or disposed of at an approved disposal facility. The disposal of all water (hydrostatic test water, stormwater, produced water) will be done in conformance with WDEQ-Water Quality Division (WQD), BLM Onshore Oil and Gas Order No. 7, and WOGCC rules and regulations.

Wetland areas will be crossed during dry conditions (i.e., late summer, fall, or dry winters); winter construction activities will occur only prior to soil freezing or after soils have thawed.

On ditches exceeding 24 inches in width, 6 to 12 inches of surface soil will be salvaged where possible on the entire right-of-way. When pipelines and communication lines are buried, there will be at least 30 inches of backfill on top of the pipe. Backfill should not extend above the original ground level after the fill has settled. Guides for construction and water bar placement are found in the most current version of "Surface Operating Standards for Oil and Gas Exploration and Development." Bladed surface materials will be re-spread upon the cleared route once construction is completed. Disturbed areas that have been reclaimed may need to be fenced when the route is near livestock watering areas.

Pipeline ROWs will be located to minimize soil disturbance. Mitigation will include locating pipeline ROWs adjacent to access roads to minimize ROW disturbance widths, or routing pipeline ROWs directly to minimize disturbance lengths.

Existing crowned and ditched roads will be used for access where possible to minimize surface disturbances. Clearing of pipeline and communication line rights-of-way will be accomplished with the least degree of disturbance to topsoil. Where topsoil removal is necessary, it will be stockpiled (wind-rowed) and re-spread over the disturbance after construction and backfilling are completed. Vegetation removed from the right-of-way will also be required to be re-spread to provide protection, nutrient recycling, and a seed source.

Temporary disturbances which do not require major excavation (e.g., small pipelines and communication lines) may be stripped of vegetation to ground level using mechanical treatment, leaving topsoil intact and root mass relatively undisturbed.

Trees, shrubs, and ground cover (not to be cleared from rights-of-way) will require protection from construction damage. Backfilling to preconstruction condition (in a similar sequence and density) will be required. The restoration of normal surface drainage will also be required.

To promote soil stability, the compaction of backfill over the trench will be required (not to extend above the original ground level after the fill has settled). Wheel or other method of compacting the pipeline trench backfill will be required at two levels to reduce trench settling

and water channeling; the first compaction after 3 feet of fill has been replaced and the subsequent compaction within 6-12 inches of the surface. Water bars, mulching, and terracing will be required, as needed, to minimize erosion. In-stream protection structures (e.g., drop structures) may be required in drainages crossed by a pipeline to prevent erosion. The fencing of linear disturbances near livestock watering areas may be required.

The Operator, grantee, or lessee will be responsible for the control of all noxious weed infestations on surface disturbances. Prior to any treatment, the Operator, grantee, or lessee will be responsible for submission of Pesticide Use Proposals and subsequent Pesticide Use Reports. Control measures will adhere to those allowed in the Final Vegetation Treatments Using Herbicides on BLM in17 Western States Programmatic EIS (June 2007) and ROD (September 2007), Rock Springs District Noxious Weed Control EA (USDI 1982) or the Regional Northwest Area Noxious Weed Control Program EIS (USDI 1987). Herbicide approvals and treatments will be monitored by the BLM AO. Aerial application of chemicals will be prohibited within 1/4 mile of special status plant locations, and hand application will be prohibited within 500 feet.

Truck traffic will not be allowed under conditions where the total volume of traffic creates ruts of 3 inches or greater on roads that are not graveled or otherwise approved for all season use.

Crossings of ephemeral, intermittent, and perennial streams associated with road and utility line construction will generally be restricted until after spring runoff and normal flows are established.

A.7 Reclamation

BLM will require each individual right-of-way, APD or other application to include a reclamation plan approved by the BLM

Site Stabilization:

1. All bare ground on a well pad that does not have active development drilling, completion, and construction) and is not required for production activities will have at least 75 percent protective cover that may include but not be limited to organic mulch, herbaceous vegetation, jute matting, or other erosion-preventative fabric.
2. During the period when an existing well pad is not being fully developed, there will be no sediment discharge from the existing pad. Operators will modify all existing well pads to approach zero sediment discharge for a 25-year storm or snowmelt event within 1 year of following authorization by BLM in the SEIS ROD.
3. Access road(s) leading to the temporarily stabilized well pad will have protective cover to the same levels required on the well pad.

Disturbed channel beds will be reshaped to their approximate original configuration.

Streams, wetlands, and riparian areas disturbed during project construction will be restored to as near pre-project conditions as practical, and if impermeable soils contributed to wetland formation, soils will be compacted to reestablish impermeability.

Wetland topsoil will be selectively handled.

Areas will be recontoured and BLM-approved species will be used for reclamation.

Reclamation activities will begin on disturbed wetland areas immediately after completion of project activities.

Upon completion of construction and/or production activities, Operators will restore the topography to near pre-existing contours at well sites, access roads, pipelines, and other facility sites.

All roads on federal lands not required for routine operation and maintenance of producing wells, ancillary facilities, livestock grazing administration, or necessary recreation access will be reclaimed as directed by the BLM. These roads will be permanently blocked, recontoured, reclaimed, and revegetated by the Operators, as will disturbed areas associated with permanently plugged and abandoned wells.

Disturbances should be reclaimed or managed to approach zero sediment discharge. All excavations and pits should be closed by backfilling and contouring to conform to surrounding terrain. On well pads and larger locations, the surface use plan will include objectives for successful reclamation including: soil stabilization, plant community composition, and desired vegetation density and diversity.

On producing locations, Operators will be required to reduce slopes to original contours (not to exceed 3:1 slopes). Areas not used for production purposes will be backfilled and blended into the surrounding terrain, reseeded, and erosion control measures installed. Erosion control measures will be required after slope reduction. Facilities will be required to approach zero runoff from the location to avoid contamination and water quality degradation downstream. Mulching, erosion control measures, and fertilization may be required to achieve acceptable stabilization.

Abandoned sites must be satisfactorily rehabilitated in accordance with a plan approved by the BLM. Soil samples may be analyzed to determine reclamation potential, appropriate reseeding species, and nutrient deficits. Tests may include: pH, mechanical analysis, electrical conductivity, and sodium content. Terraces or elongated water breaks will be constructed after slope reduction.

Current BLM policy recognizes that there may be more than one correct way to achieve successful reclamation, and a variety of methods may be appropriate to the varying circumstances. BLM will continue to allow applicants to use their own expertise in recommending and implementing construction and reclamation projects. These allowances still hold the applicant responsible for final reclamation standards of performance.

All reclamation is expected to be accomplished as soon as possible after the disturbance occurs with efforts continuing until a satisfactory revegetation cover is established and the site is stabilized (3 to 5 years). Only areas needed for construction will be allowed to be disturbed.

On all areas to be reclaimed, seed mixtures will be required to be site-specific, composed of native species, and will be required to include species promoting soil stability. A pre-disturbance species composition list must be developed for each site if the project encompasses an area where there are several different plant communities present. Livestock palatability and wildlife habitat needs will be given consideration in seed mix formulation. BLM guidance for native seed use is BLM Manual 1745 (Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants), and Executive Order No. 11987 (Exotic Organisms).

Interseeding, secondary seeding, or staggered seeding may be required to accomplish revegetation objectives. During rehabilitation or areas in important wildlife habitat, provision will be made for the establishment of native browse and form species, if determined to be beneficial for the habitat affected. Follow-up seeding or corrective erosion control measures may be required on areas of surface disturbance which experience reclamation failure.

Any mulch and mineral material (sand and gravel) used will be certified weed free and free from mold or fungi. Mulch may include native hay, small grain straw, wood fiber, live mulch, cotton, jute, synthetic netting, and rock. Straw mulch should contain fibers long enough to facilitate crimping and provide the greatest cover.

Operators will monitor noxious weed occurrence on the project area and implement a noxious weed control program in cooperation with the BLM and Sublette County to ensure noxious weed invasion does not become a problem. Weed-free certification by county extension agents will be required for grain or straw used for mulching revegetated areas. Gravel and other surfacing materials used for the project will be reasonably free of noxious weeds.

Herbicide applications will be kept at least 500 feet from known SSPS populations or other distance deemed safe by the BLM AO.

A.8 Wetlands, Riparian Areas, and Flood Plains

All surface disturbance, permanent facilities, etc., will remain a minimum of 500 feet away from the edge of surface waters, riparian areas, wetlands, and 100-year floodplains unless it is determined through site specific analysis, approved in writing by the BLM AO, that there is no practicable alternative to the proposed action. If such a circumstance exists, then all practicable measures to mitigate possible harm to these areas must be employed. These mitigating measures will be determined on a case-by-case basis and may include, but are not limited to, diking, lining, screening, mulching, terracing, and diversions.

Floodplains by their very nature are unsafe locations for permanent structures. With an inundation of flood waters, soils disturbed by construction could experience a rate of erosion greater than undisturbed sites. There is an additional concern over the potential for flood waters to aid in the dispersal of hazardous materials that may be stored within such structures. Therefore, federally-managed 100-year floodplains will have no permanent structures constructed within their boundaries unless it can be demonstrated on a case-by-case basis that there is no physically practical alternative. In cases where floodplain construction is approved, additional constraints could be applied.

Floodplain Executive Order 11988 (Section 2.a.(2)) states in summary that "...if the HEAD OF THE AGENCY finds that the only practicable alternative consistent with the law and the policy set forth in the Order requires siting in a floodplain, the agency will, prior to taking action, 1) design or modify its action in order to minimize potential harm...and 2) prepare and circulate a notice containing an explanation of why the action proposed is to be located in the floodplain."

Floodplain Executive Order 11988 (Section 3), in reference to federal real property and facilities states that agencies will, if facilities are to be located in a floodplain (i.e., no practicable alternative), apply flood protection measures to new construction or rehabilitate existing structures, elevate structures rather than fill the land, provide flood height potential markings on facilities to be used by the public, and when the property is proposed for lease, easement, right of way, or disposal, the agency has to attach restriction on uses in the conveyance, etc., or withhold from such conveyance.

Any disturbances to wetlands and/or waters of the U.S. will be coordinated with the COE, and 404 permits will be secured as necessary prior to disturbance.

Operators will evaluate all project facility sites for occurrence of waters of the U.S., special aquatic sites, and wetlands, per COE requirements. All project activities will be located outside of these sensitive areas, where practical.

Where disturbance of wetlands, riparian areas, streams, and ephemeral/intermittent stream channels cannot be avoided, COE Section 404 permits will be obtained by the Operator as necessary.

A.9 Air Quality

In accordance with Wyoming Air Quality Standards and Regulations Chapter 3, Section 2(f), the emission of fugitive dust will be limited by all persons handling, transporting, or storing any material to prevent unnecessary amounts of particulate matter from becoming airborne to the extent that ambient air standards described in these regulations are exceeded.

Necessary air quality permits to construct, test, and operate facilities will be obtained from the WDEQ-Air Quality Division. All internal combustion equipment will be kept in good working order.

Operators will comply with all applicable local, state, tribal, and federal air quality laws, statutes, regulations, standards, and implementation plans, including Wyoming Ambient Air Quality Standards (WAAQS) and National Ambient Air Quality Standards (NAAQS).

To avoid the incremental risk of exposure to carcinogenic toxins from producing wells, no well will be located closer than 0.25 mile from a dwelling or residence. At 0.25 mile, the incremental risk increase for the most likely exposure scenario is below the designated threshold level of less than 1 additional person per million.

To avoid incremental risk of exposure to carcinogenic toxins from compressor facilities, any compressor facility located closer than 4 miles to a dwelling or residence will require additional NEPA analysis prior to the final selection of the site and authorization to construct.

A.10 Recreation

Operators will restrict off-road vehicle (ORV) activity by employees and contract workers to the immediate area of authorized activity or existing roads and trails.

A.11 Grazing

All range improvements (stock water tanks, pipelines, corrals, etc.) should be avoided by 500 feet unless no other alternative is available and impacts can be mitigated as per the BLM AO.

A.12 Groundwater and Surface Water

Notice of any spill or leakage, as defined in BLM NTL 3A, will be immediately reported by the Operator to the AO and other such federal and state officials (e.g., WDEQ) as required by law. Verbal notice will be given as soon as possible, but within 24 hours, and verbal notices will be confirmed in writing within 72 hours of any such occurrence. Any accidental soil contamination by spills of petroleum products or other hazardous materials will be cleaned up and the soil disposed of or rehabilitated according to WDEQ Solid Waste Guidelines (#2) for petroleum contaminated soils.

Operators will prepare Stormwater Pollution Prevention Plans (SWPPPs) for their respective areas of field development as required by WDEQ National Pollution Discharge Elimination System (NPDES) permit requirements.

Any industrial water wells and any tanks, pumps, hoses, pipes or other associated connections will include check valves, backflow preventers or other devices that secure the well against discharge of fluids into the well.

All fresh water used for the drilling of the surface casing must comply with all requirements concerning water quality as set forth by the WOGCC Regulations.

All water used in association with this project will be permitted through the Wyoming State Engineer's Office.

All water wells put to beneficial use, including produced water associated with this project, will be under the jurisdiction of the Wyoming State Engineer's Office.

A.13 Cultural/Paleontological Resources

If effects to paleontological values, objects of historic or scientific interest, are observed, the Operator will be required to immediately contact the BLM and the Operator will be required to cease any operations that will result in the destruction of or adverse impact to these values.

In areas of paleontological sensitivity, a determination will be made by the BLM as to whether a survey by a qualified paleontologist is necessary prior to the disturbance. In some cases, construction monitoring, project relocation, data recovery, or other mitigation will be required to ensure that significant paleontological resources are avoided or recovered during construction.

If paleontological resources are uncovered during surface-disturbing activities, Operators will suspend operations at the site that will further disturb such materials and immediately contact the BLM AO, who will arrange for a determination of significance, and, if necessary, recommend a recovery or avoidance plan. Mitigation of impacts to paleontological resources will be on a case-by-case basis, and Operators will either avoid or protect paleontological resources.

Areas underlain by either the Wasatch or Green River formations have a high potential for containing vertebrate paleontological resources (fossils) and must be surveyed by a qualified paleontologist before surface disturbing activities will be authorized if determined appropriate by the BLM AO. Based on the results of the paleontological survey, additional monitoring and/or mitigation will be necessary. All major pipelines (12" and larger) will have paleontological open trench inspections and geologic research to resolve mapping issues identified in Chapter 3. Other actions, such as on-site project monitors by professional paleontologists while surface disturbing activities are occurring, and/or spot-checks of spoil piles, pits and trenches prior to backfilling will become more common and will be considered standard stipulations within the Blue Rim-Ross Butte Management Area.

Operators will follow the NHPA Section 106 compliance process prior to any surface-disturbing activity and will either avoid or protect cultural resource properties.

Operators will halt construction activities at the site of previously undetected cultural resources discovered during construction. The BLM will be notified immediately, and consultation with the Wyoming State Historic Preservation Office (SHPO) and, if necessary, the Advisory Council, will be initiated to determine proper mitigation measures pursuant to 36 CFR 800.11 or other treatment plans, programmatic agreements, or discovery plans that may direct such efforts. Construction will not resume until a Notice to Proceed is issued by the BLM.

In culturally sensitive soils, if cultural resources are located within frozen soils or sediments precluding the ability to adequately record or evaluate the find, construction work will cease and the site will be protected for the duration of frozen soil conditions. Following natural thaw, recordation, evaluation and recommendations concerning further management will be made to the BLM AO, who will consult with affected parties. Construction work will be suspended until management of the threatened site has been finalized.

Should future work identify any traditional Native American religious or sacred sites, consultation among the BLM, the affected Native American group, the Wyoming SHPO and the project proponent will occur to resolve conflicts. This consultation will occur on a case-by-case basis, or in conformance with an approved Native American Concerns Agreement Document.

Operators should inform their employees, contractors and subcontractors about relevant federal regulations intended to protect archaeological and cultural resources. All personnel should be informed that collecting artifacts (including arrowheads) is a violation of federal law and that employees engaged in this activity may be subject to disciplinary action, which could include dismissal.

Equipment operators should be informed that a cultural resource could be found anywhere; and if they uncover a site during construction, surface disturbing activities at the site must be immediately halted and the BLM notified.

Historic trails will be avoided. Surface disturbing activities will avoid areas within 0.25 miles of a trail unless such disturbance will not be visible from the trail or will occur in an existing visual intrusion area. Historic trails will not be used as haul roads. Placement of facilities outside 0.25 mile that are within view of the Lander Trail will be located to blend the site and facilities in with the background.

A.14 Hazardous Waste Disposal

Operators will utilize WDEQ-approved portable sanitation facilities at drill sites; place warning signs near hazardous areas and along roadways; place dumpsters at each construction site to collect and store garbage and refuse; ensure that all refuse and garbage is transported to a State-approved sanitary landfill for disposal; and institute a Hazard Communication Program for its employees and require subcontractor programs in accordance with OSHA regulations (29 CFR 1910.1200).

In accordance with 29 CFR 1910.1200, a Material Safety Data Sheet for every chemical or hazardous material brought on-site will be kept on file at the Operator's field office.

Chemical and hazardous materials will be inventoried and reported in accordance with the SARA Title III (40 CFR 335). If quantities exceeding 10,000 pounds or the threshold planning quantity are to be produced or stored, the appropriate Section 311 and 312 forms will be submitted at the required times to the State and County Emergency Management Coordinators and the local fire departments.

Any hazardous wastes, as defined by the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, will be transported and/or disposed of in accordance with all applicable federal, state, and local regulations.

Owners or operators of onshore facilities (any facility of any kind, or drilling or workover rigs) that, due to their location, could reasonably be expected to discharge oil in harmful quantities (as defined in 40 CFR part 110 & 112.3), into or upon navigable waters of the United States or adjoining shorelines, will prepare a Spill Prevention Control and Countermeasure Plan (SPCC Plan) in accordance with 40 CFR 112.7. Owners or operators of drilling or workover rigs need not prepare a new SPCC Plan each time the facility is moved to a new site. The SPCC Plan may be a general plan, using good engineering practice (40 CFR 112.3 (a), (b), and (c)). Owners or operators of a facility for which an SPCC Plan is required will maintain a complete copy of the Plan at such facility if the facility is normally attended at least 8 hours per day, or at the nearest field office if the facility is not so attended (40 CFR 112.3(e)).

SPCC Plans will be implemented and adhered to in a manner such that any spill or accidental discharge of oil will be remediated. An orientation should be conducted by the Operators to ensure that project personnel are aware of the potential impacts that can result from accidental spills and that they know the appropriate recourse if a spill occurs. Where applicable and/or required by law, streams at pipeline crossings will be protected from contamination by pipeline shutoff valves or other systems capable of minimizing accidental discharge. If reserve pit leakage is detected, operations at the site will be curtailed, as directed by the BLM, until the leakage is corrected.

All natural gas wells will be cased and cemented to protect subsurface mineral and freshwater zones. Unproductive wells and wells that have completed their intended purpose will be properly abandoned and plugged using procedures identified by the Office of State Oil and Gas Supervisor, Rules and Regulations of WOGCC and the BLM.

A.15 Threatened and Endangered Species, Special Status Species, and Wildlife

T&E and Special Status Species

If while conducting operations, substantial unanticipated environmental effects to listed, proposed or candidate species are observed (whether effects are direct or indirect), formal consultation with U.S. Fish and Wildlife Service (USFWS) will be immediately initiated in addition to cessation of all such operations.

USFWS and WGFD consultation and coordination will be conducted for all mitigation activities relating to raptors and T&E species and their habitats, and all permits required for movement, removal, and/or establishment of raptor nests will be pursued if they meet USFWS migratory bird office requirements.

Surveys for T&E and candidate wildlife species will be implemented in areas of potential habitat by a qualified biologist prior to disturbance. Findings will be reviewed by the BLM prior to or as components of ROW applications and APD review processes. If T&E and/or candidate species are found in the area, consultation with the USFWS will be initiated, and construction activities will be curtailed until there is concurrence between BLM and USFWS on what activities can be authorized.

Proposed construction sites in the development area will be examined prior to surface-disturbing activities to confirm the presence or absence of prairie dog colonies, where appropriate. Confirmation will be made of white-tailed prairie dog colony/complex size, burrow density, and any other data to indicate whether the criteria for black-footed ferret habitat, established in the USFWS guidelines, are present. If prairie dog colony/complex meets the USFWS criteria, a qualified biologist will locate all project components to avoid direct, indirect and cumulative impacts to the colony/complex. If this is not practical or possible, black-footed ferret surveys of the prairie dog colony/complex, where required by the USFWS, will be conducted in accordance with USFWS guidelines and requirements. The results of the survey will be provided to the USFWS in accordance with Section 7 of the ESA, as amended, and Interagency Cooperation Regulations (50 CFR § 402-June 3, 1986). If a black-footed ferret or its sign is found during the survey, the BLM AO will stop all action on the application in hand. New roads and trails should not cross colonies.

A survey for black-footed ferret may be required prior to approval of construction activities.

The USFWS has determined that any withdrawal of water from the Colorado River System (surface or ground water) will jeopardize the endangered Colorado pikeminnow, humpback chub, bonytail, and razorback sucker. The USFWS Colorado River Endangered Fish Recovery

Program requires a depletion fee be paid by the proponent to help support the recovery program. The fee is required for each acre-foot of water depletion where the depletion of water is in excess of 100 acre-feet from the Colorado River system.

Operators will finance site-specific surveys for special status plant species (SSPS) prior to any surface disturbance in areas determined by the BLM to contain potential habitat for such species (Directive USDI-BLM 6840). These surveys will be completed by a qualified botanist as authorized by the BLM and this botanist will be subject to BLM's SSPS survey policy requirements. Data from these surveys will be provided to the BLM, and if any SSPS or habitats are found, BLM recommendations for avoidance or mitigation will be implemented.

Migratory Birds

Bald eagles roost, perch, feed, and nest along the Green and New Fork rivers. To ensure continued protection of this species, no surface disturbing or human activities will be authorized between November 1 and April 1 within 1.0 mile of known bald eagle winter use areas. All surface-disturbing or human activity, including construction of roads, pipelines, well pads, drilling, completion, or workover operations, will be seasonally restricted from February 1 through August 15 within 1.0 mile of all active eagle nests. An active eagle nest is one that has been occupied once in the past 5 years.

Permanent (life of the project) and high profile structures such as well locations, roads, buildings, storage tanks, overhead power lines, etc., and other structures requiring repeated human presence will not be constructed within 825 feet (1,000 feet for ferruginous hawks; 2,600 feet for bald eagles) of occupied raptor nests. Wells that must be located closer than 2,600 feet (but will not be allowed closer than 2,000 feet) of a bald eagle nest will be out of the direct line of sight of the nest; will have no human activity at the well site from February 1 through August 15 except in the case of an emergency; and will locate production facilities off-site or at a central production facility location at a distance of 2,600 feet or more from the nest. In these cases the USFWS will be contacted to ensure compliance under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

All surface-disturbing activity (e.g., road, pipeline, well pad construction, drilling, completion, workover operations) will be seasonally restricted from February 1 through July 31 within a 0.5-mi radius of all occupied raptor nests, except ferruginous hawk nests, for which the seasonal buffer will be 1.0 mi. The seasonal buffer distance and exclusion dates applicable may vary depending on such factors as the activity status of the nest, species involved, prey availability, natural topographic barriers, line-of-site distance(s), and other conflicting issues such as cultural values, steep slopes, etc.

Except for bald eagles which are discussed above, raptor nest surveys will be conducted for active nests within a 0.5- to 1.0-mile radius of proposed surface use or activity areas if such activities are proposed to be conducted between February 1 and July 31. An active raptor nest is defined as a nest that has been occupied within the past 3 years.

The buffer distance for raptors may vary depending upon the species involved, prey availability, natural topographic barriers, line-of-sight distances, and other conflicting issues such as cultural values, steep slopes, etc. Linear disturbances such as pipelines, seismic activity, etc., could be granted exceptions as long as they will not adversely affect the raptor(s).

Surface disturbing and disruptive activity will be prohibited within 0.5 mile of occupied burrowing owl nests from April 1 through August 15. Surveys may be required to determine nesting status.

For surface disturbing activities, surveys will be conducted within suitable plover habitat by a qualified biologist in accordance with USFWS 1999 guidelines (A copy of the guidelines may be obtained from the USFWS, BLM, or WGFD). Two types of surveys may be conducted. 1) surveys to determine the presence/absence of breeding plovers (i.e., displaying males and foraging adults), or 2) surveys to determine nest density.

If surface disturbing activity is requested to take place in mountain plover habitat between April 10 and July 10, presence / absence surveys are required. Survey results will determine when activities are proposed.

Surveys to determine presence/absence of the plover will be conduct between May 1 and June 15 through out the breeding range.

Visual observation of the area should be made within 0.25 mile of the proposed action to detect the presence of plovers.

A site must be surveyed for plover three times during the survey window, with each survey separated by at least 14 days.

Initiation of the project should occur as near to completion of the plover survey as possible within 2 days for seismic exploration; a 14-day period may be appropriate for other projects.

If active plover nest is found in the survey area, the planned activity should be delayed 37 days, or one week post-hatching. If a brood of flightless chicks is observed, activities should be delayed at least 7 days.

Plover surveys will be conducted during early courtship and territorial establishment. Throughout the breeding range, this period extends from approximately mid-April through early July. However, the specific breeding period depends on latitude, elevation, and weather.

Plover surveys will be conducted between local sunrise and 10 a.m., and from 5:30 p.m. and sunset (periods of horizontal light to facilitate spotting the white breast of the adult plovers).

Drive transects within the project area to minimize early flushing. Flushing distances for mountain plovers may be within 3 meters (9 to 10 feet) for vehicles, but plovers often flush at 50 to 100 meters (164 to 328 feet) when approached by humans on foot.

Any pits with harmful fluids in them will be maintained in a manner that will prevent migratory bird mortality.

Sage Grouse

Surface disturbance within 0.25 mile of an occupied greater sage-grouse lek will be avoided. Linear disturbances such as pipelines, seismic activity, etc., could be granted exceptions since they do not have long-term, continuous activity associated with them that could impact breeding success.

Permanent (life of the project), high profile structures such as buildings and storage tanks will not be constructed within 0.25 mile of an occupied greater sage-grouse lek.

In selecting a site for a compressor facility, a well pad or other permanent facility, the distance from the edge of a an occupied greater sage-grouse lek will be sufficient to result in a noise level increase from operating facilities no greater than 10 decibels (dBA) above background (i.e., 39 dBA background + 10 dBA = 49 dBA). Further restrictions may be required if the species is determined by the USFWS to be eligible for listing as either threatened or

endangered pursuant to the Endangered Species Act. Monitoring will be required by BLM to determine which leks in the PAPA are occupied and which have been abandoned.

If existing information is not current, field evaluations for greater sage-grouse leks and/or nests will be conducted by a qualified biologist prior to the start of activities in potential greater sage-grouse habitat. These field evaluations for leks and/or nests will be conducted if project activities are planned in potential greater sage-grouse habitat between March 15 and July 15. BLM wildlife biologists will ensure that such surveys are conducted using proper survey methods.

Operators may be required to apply noise mitigation at well locations, as determined necessary by the BLM AO, on a case-by-case basis.

General Wildlife

Well locations and associated road and pipeline routes will be selected and designed to avoid disturbances to areas of high wildlife value (e.g., raptor nest sites, wetland areas).

Avoid activities and facilities that create barriers to the seasonal movements of big game and livestock.

Reserve, workover, and production pits potentially hazardous to wildlife will be adequately protected (e.g., fencing, netting) to prohibit wildlife access as directed by the BLM.

Wildlife-proof fencing will be utilized on reclaimed areas, in accordance with standards specified in BLM Fencing Handbook 1741-1, if it is determined that wildlife species are impeding successful vegetation establishment.

ROW fencing associated with this project will be kept to a minimum and, if necessary, fences will consist of four-strand barbed wire meeting WGFD approval and BLM Fencing Handbook 1741-1 standards for facilitating wildlife movement.

As appropriate, if breeding birds are observed, additional surveys will be conducted immediately prior to construction activities to search for active nest sites.

To avoid potentially significant noise impacts, compressor engines will be located 2,500 feet or more from a dwelling or residence and from sage-grouse leks.

A.16 Visual Resource Management

Approval of well pad locations, new roads, buried pipelines, or other facilities within VRM Class II and III areas and any other visually sensitive area as determined by the BLM AO, will require the Operator to demonstrate to the BLM AO's satisfaction that the location and/or facilities have reasonably incorporated visual design considerations that will mitigate unnecessary visual impacts in all areas of the PAPA.

Within Visual Resource Management (VRM) Class II and III areas, during on-site reviews, the BLM and the Operator will evaluate potential disturbances and impacts to visual resources and identify appropriate mitigation. New roads will be designed so that they conform with the landscape, incorporating curves to eliminate distant, straight line impacts; every opportunity will be taken to reclaim existing road ROWs that are not used. Revegetation will be initiated as soon as possible after disturbance; pipeline ROWs will be located within existing ROWs whenever possible; and aboveground facilities not requiring safety coloration will be painted with appropriate nonreflective standard environmental colors (Carlsbad Canyon or Shale Green, or other specified standard environmental color) specified by the BLM. Topographic screening,

vegetation manipulation, project scheduling, and traffic control procedures will all be employed as deemed appropriate by the BLM to further reduce visual impacts.

Low profile tanks will be required wherever visual sensitivity is an issue and/or wherever deemed appropriate mitigation to help maintain the basic characteristics of the landscape. Unless excepted, BLM will allow only low profile tanks north of the New Fork River and within the Lander Trail viewshed.

Within Visual Resource Management (VRM) Class IV areas, the BLM and Operators will utilize existing topography to screen roads, pipeline corridors, drill rigs, wells, and production facilities from view, where practical. Operators will paint all aboveground production facilities with appropriate colors (e.g., Carlsbad Canyon or Desert Brown) specified by the BLM to blend with adjacent terrain, except for structures that require safety coloration in accordance with OSHA requirements.

One way to avoid visual impacts associated with construction of well pads, roads, and pipelines in visually sensitive areas is to avoid any surface disturbing activities, where practical, on the sensitive soils shown on Map 3.17-1 in the Final SEIS. Locating well pads on sensitive soils or slopes greater than 10 to 15 percent increases the total amount of disturbance because larger areas will be needed to accommodate the well pad, road or pipeline. Furthermore, disturbed sensitive soils could be difficult to reclaim because topsoil is limiting, effective moisture is low and erosion is high. The badland soils in the Blue Rim Area of the PAPA are unique landform features that provide character to the landscape and, if disturbed, could not be reclaimed to their original form. Well pads, roads and buried pipelines will avoid the sensitive soils shown on Map 3.17-1 in the Final SEIS.

Avoid the introduction of new, linear visual intrusions on the landscape. New roads and pipeline corridors, to the extent practicable, will follow contours and use topography as screening. New pipelines will be combined with existing or proposed roads and, wherever possible, new cross-county pipeline corridors will be avoided.

Any well pad developed in any area managed for visual resources, roads and well pads may need to be surfaced with materials that reduce visual contrast. For example, in the VRM Class II area near Pinedale, the subsoil material (Wasatch Formation) can be very light in color and thus contrasts with surrounding undisturbed areas. Mixing topsoil with gravel (1 inch deep) in highly visible areas will help to reduce contrast. Operators will be required to investigate the feasibility of applying this opportunity of surfacing roads and well pads with materials closer in color and texture to the surrounding landscape.

APPENDIX B

Wildlife Monitoring and Mitigation Matrix

B.1 Wildlife Monitoring and Mitigation Matrix

Species	Criteria	Method	Changes that Will Be Monitored	Specific Change Requiring Mitigation	Mitigation Responses
Mule Deer	Change in Mesa deer numbers	Current mule deer study, and use of WGFD data	Change in deer numbers in any year, or a cumulative change over all years, initially compared to average of 05/06 numbers (2856 deer)	15% decline in any year, or cumulatively over all years, compared to reference area (Sublette mule deer herd unit [average 05/06 herd unit population is 27,254], or other mutually agreeable area).	Select mitigation response sequentially as listed below, implement most useful and feasible and monitor results over sufficiently adequate time for the level of impact described by current monitoring.
	Avoidance distances		Average of any 2-year avoidance distance from well pads and roads, and a concurrent change in deer numbers compared to average of 05/06 numbers (2856 deer)	Average of 0.5 km change per year over 2 years, and a concurrent 15% decline in deer numbers in any year, compared to reference area (Sublette mule deer herd unit [average 05/06 herd unit population is 27,254], or other mutually agreeable area).	Select mitigation response sequentially as listed below, implement most useful and feasible and monitor results over sufficiently adequate time for the level of impact described by current monitoring.
Antelope	Change in Anticline antelope numbers	Present WCS antelope study; Present TRC project; and use of WGFD data	Change in antelope numbers in any year, or a cumulative change over all years, initially compared to first year of available antelope data	15% decline in any year, or cumulatively over all years, compared to reference area (Sublette antelope herd unit or other, mutually agreeable area)	Select mitigation response sequentially as listed below, implement most useful and feasible and monitor results over sufficiently adequate time for the level of impact described by current monitoring.
	Size of habitat fragments used		Use by antelope in any year, initially compared to first year of available antelope habitat use data, and a concurrent change in antelope numbers compared to first year of available antelope data	10% decline in habitat availability for one year, and a concurrent 15% change in antelope numbers for that year, compared to reference area (Sublette antelope herd unit or other mutually agreeable area).	Select mitigation response sequentially as listed below, implement most useful and feasible and monitor results over sufficiently adequate time for the level of impact described by current monitoring.
Sage Grouse	Number of active leks in identified lek complexes	Lek counts according to protocol	Active use on 70% of total current leks; Active use on 70% of leks in each complex (the development area complexes include the Mesa, Duke's Triangle, and Yellow Point complexes) compared to 2007 data	30% decline in total number of active leks, or 30% decline in the number of leks in a single complex [1]	Select mitigation response sequentially as listed below, implement most useful and feasible and monitor results over sufficiently adequate time for the level of impact described by current monitoring.

Species	Criteria	Method	Changes that Will Be Monitored	Specific Change Requiring Mitigation	Mitigation Responses
Sage Grouse (cont.)	Peak numbers of males attending lek complexes[1]	Lek counts according to protocol	Total average 2-year change in numbers of males attending development area lek complexes (the Mesa, Duke's Triangle, or Yellow Point lek complex), compared to the East Fork, Speedway, or Ryegrass reference lek complexes	Average of 30% decline in numbers over 2 years compared to reference area[1]	Select mitigation response sequentially as listed below, implement most useful and feasible and monitor results over sufficiently adequate time for the level of impact described by current monitoring.
	Nesting success and habitat selection	Current sage grouse study; WGFD data	Change in nesting success compared to reference areas, or change in nesting success and a concurrent change in habitat selection by nesting hens in relation to development disturbance	Average of 15% per year decline over 2 years in nesting success compared to reference area, or a 0.5 km increase in avoidance distance per year over 2 consecutive years and a concurrent change of an average of 15% per year decline over 2 years in nesting success compared to reference area	Select mitigation response sequentially as listed below, implement most useful and feasible and monitor results over sufficiently adequate time for the level of impact described by current monitoring.
	Winter concentration area use	Monitoring according to protocol	Change in winter concentration area use compared to reference area (once initial data is available), and a concurrent change in the total average 2 year numbers of males attending development area lek complexes (the Mesa, Duke's Triangle or Yellow Point lek complex), compared to the East Fork, Speedway, or Ryegrass reference lek complexes	Average of 15% per year decline in amount of winter habitat used over 2 years compared to reference areas, and a concurrent average of 30% decline in numbers over 2 years compared to reference area	Select mitigation response sequentially as listed below, implement most useful and feasible and monitor results over sufficiently adequate time for the level of impact described by current monitoring.

Species	Criteria	Method	Changes that Will Be Monitored	Specific Change Requiring Mitigation	Mitigation Responses
Sage Grouse (cont.)	Noise levels	Decibel monitoring from March 1-May 15 at lek sites	Noise levels demonstrated to impact peak lek use by male sage grouse and a concurrent change in the total average 2-year numbers of males attending development area lek complexes (the Mesa, Duke's Triangle, or Yellow Point lek complex), compared to the East Fork, Speedway, or Ryegrass reference lek complexes	Decibel levels at the lek more than 10 dBA above background measured from the edge of the lek (2000 ROD, p.27), and a concurrent average of 30% decline in peak numbers of male birds over 2 years vs. reference area.	Select mitigation response sequentially as listed below, implement most useful and feasible and monitor results over sufficiently adequate time for the level of impact described by current monitoring.
Sensitive Species[2]	Occurrence of species and change in numbers of each species	TRC data, existing and continued	3-year change in presence/absence of species, and in numbers of individuals of each species, compared to reference areas.	3 consecutive years of decline in presence or absence of a species, or an average of 15% decline in numbers of individuals each year over 3 years.	Select mitigation response sequentially as listed below, implement most useful and feasible and monitor results over sufficiently adequate time for the level of impact described by current monitoring.

[1] If the number of leks decline but the bird numbers on lek complexes do not, the mitigation threshold would not be surpassed. If the number of leks does not decline but the bird numbers on lek complexes does decline, the mitigation threshold would be surpassed. If both numbers of leks and birds decline, the mitigation threshold would obviously be surpassed.

[2] Pygmy rabbit and white-tailed prairie dog

B.2 MITIGATION RESPONSES

It is noted that these mitigation responses all follow operational mitigation measures already in place for development of the field, and deal with the remaining unavoidable impacts from field development.

The mitigation process utilizes performance-based measures to proactively react to emerging undesired changes, specifically declines in populations, early enough to assure both effective mitigation responses and a fluid pace of development over the life of the project. In that regard, this process is designed to provide certainty to the affected agencies and the public that impacts to wildlife will be addressed before consequences become severe or irreversible by monitoring changes and responding early. Initial mitigation will utilize Mitigation Responses 1, 2, and 3. Certainty of adequate results will be through implementation of a mitigation response followed by monitoring of mitigation results and, if the results are not satisfactory, repeating the process with another response from Mitigation Responses 1, 2, or 3 until the desired results are achieved or all feasible responses from this group are exhausted. It is fully anticipated that with multiple mitigation attempts with subsequent monitoring, it will be several years before modification of operations as noted in Mitigation Response 4 will be considered.

Sufficient time will be allowed for mitigation measures to demonstrate the desired result before the next mitigation response for each specific impact is required, and this expected time will be estimated when the measure is planned and implemented. If continued monitoring indicates that additional levels of impacts occur, beyond those already being mitigated, additional mitigation for those impacts will also occur, and will also initially utilize Mitigation Responses 1, 2, and 3. Priority for mitigation will be given to those habitats designated as most crucial or important (big game crucial winter ranges; sage grouse breeding, nesting, and winter habitats; raptor nesting areas; sensitive species habitats).

Monitoring of unavoidable impacts that could result in a mitigation response is designed to identify those impacts directly attributable to oil and gas activities by isolating natural fluctuations in wildlife populations and habitat use (e.g., severe winters, drought, wildfires, disease) as well as other unrelated cumulative man-made impacts (e.g., prescribed fires, hunting seasons) from those caused by the development of the Pinedale Anticline.

During the first annual planning meeting a monitoring and mitigation plan will be initiated to describe more specifically the details and process of monitoring and selection of actual mitigation responses. This plan will be updated each year, based on the monitoring and mitigation results and future needs that are apparent at that time. Monitoring methods, changes requiring mitigation and mitigation responses are also subject to discussion and change as part of these annual planning meetings, and are subject to change in response to new research and other updated information as it becomes available. Specific monitoring requirements for wildlife will be developed by the Wyoming Game and Fish Department, in cooperation with the operators and their contractors. When monitoring indicates a change requiring mitigation, serious mitigation efforts would be made to avoid the change becoming greater. Once a change requiring mitigation happens, mitigation will be continued and monitored for the life of the impact and any reclamation associated with it.

Should a change requiring mitigation occur, mitigation responses, in accordance with BLM policy, will first evaluate on-site measures then off-site measures as outlined in the following sequence:

On-site

1. Protection of flank areas from disturbance (e.g., voluntary lease suspensions, lease buyouts, voluntary limits on area of delineation/development drilling) to assure continued habitat function of flank areas, and to provide areas for enhancement of habitat function.
2. Habitat enhancements of SEIS area (both core/crest and flanks) at an appropriate (initially 3:1) enhancement-to-disturbance acreage ratio.

On-site/Off-site

1. Conservation Easements or property rights acquisitions to assure their continued habitat function, or provide an area for enhanced habitat function (e.g., maintenance of corridor and bottleneck passages, protection from development, establishment of forage reserves, habitat enhancements at an appropriate (initially 3:1) enhancement-to-disturbance acreage ratio).

Modification of Operations

1. Recommend, for consideration by Operators and BLM, adjustments of spatial arrangement and/or pace of ongoing development.

APPENDIX C

Reclamation Plan

Reclamation Plan

All operators are responsible for the satisfactory and timely reclamation of the land surface disturbed by their operations in accordance with federal regulations and the standards, guidelines, and criteria set forth below. These standards will apply to all surface disturbing activities including but not limited to pads, roads, right-of-way, and all industry associated pipelines.

All surface disturbances will be reclaimed to meet Bureau of Land Management (BLM) standards as described in Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development – The Gold Book, and specific criteria identified in this document. Habitat and livestock grazing reclamation will be initiated to meet criteria standards on all portions of the well pads, access roads, etc not needed for production operations when the last well on the pad is drilled and completed or when no forecasted drilling (based in existing Wyoming Oil and Gas Conservation Commission permitted spacing or depth limitations) or completion activity is expected within two years, but additional well development activity is planned on the pad. Site stabilization including seeding will occur during the first appropriate growing season. BLM will coordinate such requests for expansion and reoccupation with Wyoming Game and Fish Department and/or other appropriate agencies through the Application for Permit to Drill (APD) process. Where practical this coordination would occur through the annual meeting, but could occur on a case-by-case basis throughout the year. These specific requirements are subject to modification through the adaptive management process.

C.1 Reclamation Objectives

The objective of **interim** reclamation is to achieve healthy, biologically active topsoil; control erosion; and restore habitat, visual, and forage function on those portions of the disturbed area not need for production operations for the life of the well or facilities or until final reclamation is initiated.

Interim reclamation will be considered successful when:

- Disturbed areas not needed for long-term production operations or vehicle travel are recontoured, protected from erosion, and revegetated with a self-sustaining, vigorous, diverse, native (or otherwise approved) plant community sufficient to minimize visual impacts, provide habitat and forage, stabilize soils, and impede the invasion of noxious weeds.

The objective of **final** reclamation is to achieve habitat, forage, and hydrologic function the functions that existed prior to disturbance. Including restoration of the original landform or creating a landform that approximates and blends in with the surrounding landform. Final reclamation involves restoring natural vegetative community, hydrologic systems, visual resources, agricultural values and wildlife habitats.

Final reclamation will be considered successful when:

- The original landform is restored for individual disturbed areas including well pads, production facility areas, roads, pipelines, and utility corridors.
- A self-sustaining, vigorous, diverse, native (or otherwise approved) plant community is established on the site, with a density or frequency sufficient to control erosion and non-native plant invasion and reestablish wildlife habitat and

forage production. Sites demonstrate productivity approximately equal to or better than pre-disturbance levels.

- Plants are resilient as evidenced by well-developed root systems, flowers, and seed heads. Sites must exhibit sustainability of desired attributes after the removal of external influences for a period of not less than one year.
- Shrubs are well established and in a "young" age class at a minimum (therefore, not comprised of seedlings that may not survive until the following year).
- In agricultural areas, irrigation systems and soil conditions are reestablished in such a way as to ensure successful cultivation and harvesting of crops.
- Erosion control is sufficient so that water naturally infiltrates into the soil and gullying, headcutting, slumping, and deep or excessive rilling (greater than 3 inches) or excessive sheet erosion is not observed.
- The site is free of federal, state and county-listed noxious weeds, oil field debris, contaminated soil, and equipment.

C.2 Reclamation Plan and Annual Reports

The operators will prepare a detailed Reclamation and Monitoring Plan within 1 year of the signing of this ROD. The Plan will include appropriate quantitative and qualitative reclamation and monitoring standards, as detailed below.

Site-specific reclamation plans will continue to be included with the section 10 of the 13 point Surface Use Plan of Operations for APD-related surface disturbing activity and in the Plan of Development (POD) for right-of-way related actions. The reclamation plan for surface disturbance should reference and be consistent with the overall Reclamation Plan for the SEIS area and should reference the ecological site type when the site type is available, or will reference general vegetation composition if ecological site type data is not available. The plan will address erosion control measures including wind erosion.

Reclamation standards, objectives, and results will be reviewed during the annual planning meetings. Reclaimed sites should be inspected annually (until either interim or final criteria, whichever is applicable for the location, is achieved) and evaluated the first and third growing seasons post seeding to determine if desirable plants are establishing. Operators will provide annual ERRP reports indicating reclamation status of all locations (to include extent of reclamation, vegetative composition, density or frequency, cover, resilience, sustainability, diversity and noxious weed presence, and surface stability). Surface disturbance reports will include "as built" GIS data in acceptable form for inclusion into BLM database.

C.3 Monitoring and Evaluation

The operators will monitor and evaluate reclamation success and shall prepare an annual monitoring and evaluation report to be submitted to BLM and the cooperating agencies a minimum of 3 weeks prior the annual meeting. Sites will be monitored and evaluated by individuals skilled in rangeland or reclamation monitoring (including knowledge of local ecology and plant identification). An interagency–review team will annually review and analyze the annual monitoring results and methods. Annual satellite imagery or other comparable imagery may assist in monitoring and evaluation.

Should the success criteria stated below not be met, the operators will be responsible for implementing additional measures as directed by BLM. Wyoming Game and Fish Department (WGFD), Wyoming Department of Environmental Quality (WDEQ) and/or other appropriate agencies may provide guidance and suggestions to BLM what the additional measures could

include, such as: soil amendments, reseeding, inter-seeding, providing precipitation, fencing to isolate plantings from ungulates, and creating snow fences to increase local snow depth.

C.4 Interim or Final Reclamation Criteria

A sample representation of the vegetative population will be used to collect the vegetative data on the reclamation and reference site. The reference site location will represent the ecological characteristics of the well pad prior to disturbance.

Successful reclamation to facilitate restoration of habitat function will be measured in stages as follows:

- Within 1 year of initiation of interim or final reclamation sites will demonstrate the establishment of a viable desirable seedling density or frequency. Desirable seedling density or frequency, compared to reference site, shall consist of a vigorous, diverse, native (or otherwise approved) plant community or ecologically comparable species as approved by BLM Authorizing Officer (AO).

C.4.1 Vegetative Criteria for Interim Reclamation

1. **Native Forbs:** The average density or frequency of desirable forbs must be a minimum of 75% of the reference site within 5 years. Diversity of forbs on a reclaimed site must be equal to or greater than the reference site within 5 years.

2. **Native Shrubs:** The average density or frequency of the shrub component must be at least 50 % of the reference site within 5 years. This includes both shrubs and half shrubs (e.g. winterfat, fringed sage, etc.). At least 15% density or frequency of the shrub component must be by the dominant species from reference site. The diversity of shrubs must be equal to or greater than the reference site.

3. **Native Grasses:** Reclaimed sites must have a minimum of three native perennial grass species present, two of which must be bunch grass species. These are to be planted at rates appropriate to achieve abundance and diversity characteristics similar to those found on the reference site.

4. **Non-Native Weeds:** Sites must be free from all species listed on the Wyoming and federal noxious weed lists. All state and federal laws regarding noxious weeds must be followed. Other highly competitive invasive species such as cheatgrass and other weedy brome will be actively treated if found in the reclaimed areas,

5. **Plant Vigor**: Plants must be resilient as evidenced by well-developed root systems, flowers, and seed heads. All sites must exhibit the sustainability of the above desired attributes after the removal of external influences. A minimum of one growing season without external influences (irrigation, mat pads, fences, etc.) may satisfy this requirement.

C.4.2 Full Site Final Reclamation Criteria

1. **Ground Cover & Ecological Function**

   To ensure soil stability and nutrient cycling, ground cover must be equal to or greater than the reference site and vegetative litter must be decomposing into the soil.

2. Vegetative Criteria

a. Native Forbs: The average density or frequency and total diversity of forbs must be equal to or greater than the reference site within 8 years

b. Native Shrubs: The average density or frequency of the shrub component must be at least 80% of the reference site within 8 years. This includes both shrubs and half shrubs (e.g. winterfat, fringed sage, etc.). At least 25% density or frequency of the shrub component must be the dominant species from the reference site. The diversity of shrubs must be equal to or greater than the reference site.

c. Native Grasses: Reclaimed sites must exhibit grass production equal to the reference site. A minimum of 3 native perennial species must be included with at least 2 bunch grass species.

d. Non-Native Weeds: Sites must be free from all species listed on the Wyoming and Federal noxious weed list. All state and federal laws regarding noxious weeds must be followed. Other highly competitive invasive species such as cheatgrass and other weedy brome grasses are also prohibited.

e. Plant Vigor: Plants must be resilient as evidenced by well-developed root systems and flowers. Shrubs will be well established and in a "young" age class at a minimum (e.g. not comprised of seedlings that may not survive until the following year.

C.4.3 Other Requirements

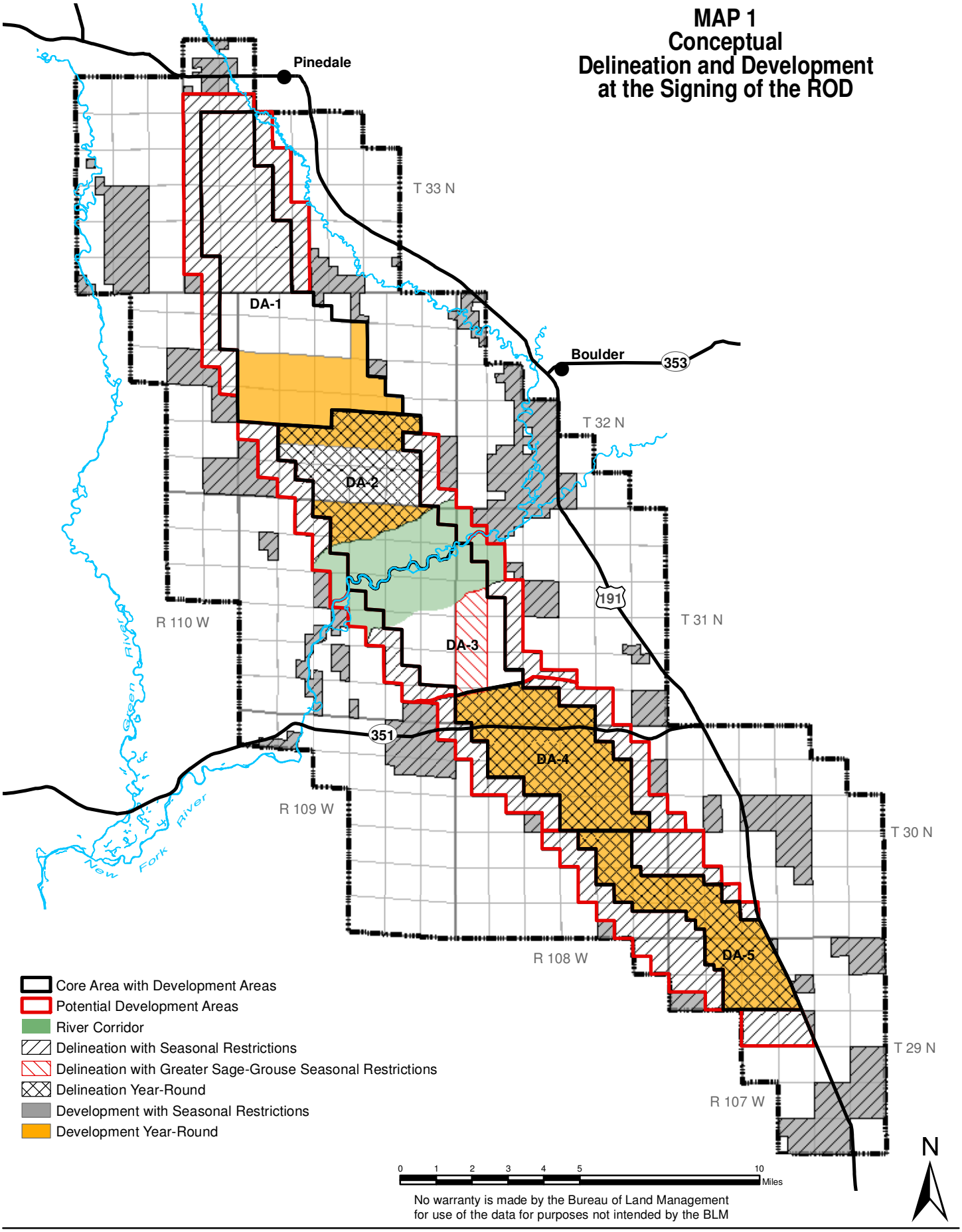
All seed must be native (or otherwise approved) ecologically suitable species and site-specific. Should available seed mixtures, techniques or other applications be available to enhance the productivity and diversity of the reclaimed area used by wildlife or livestock, these methods should be pursued as approved by the BLM AO.

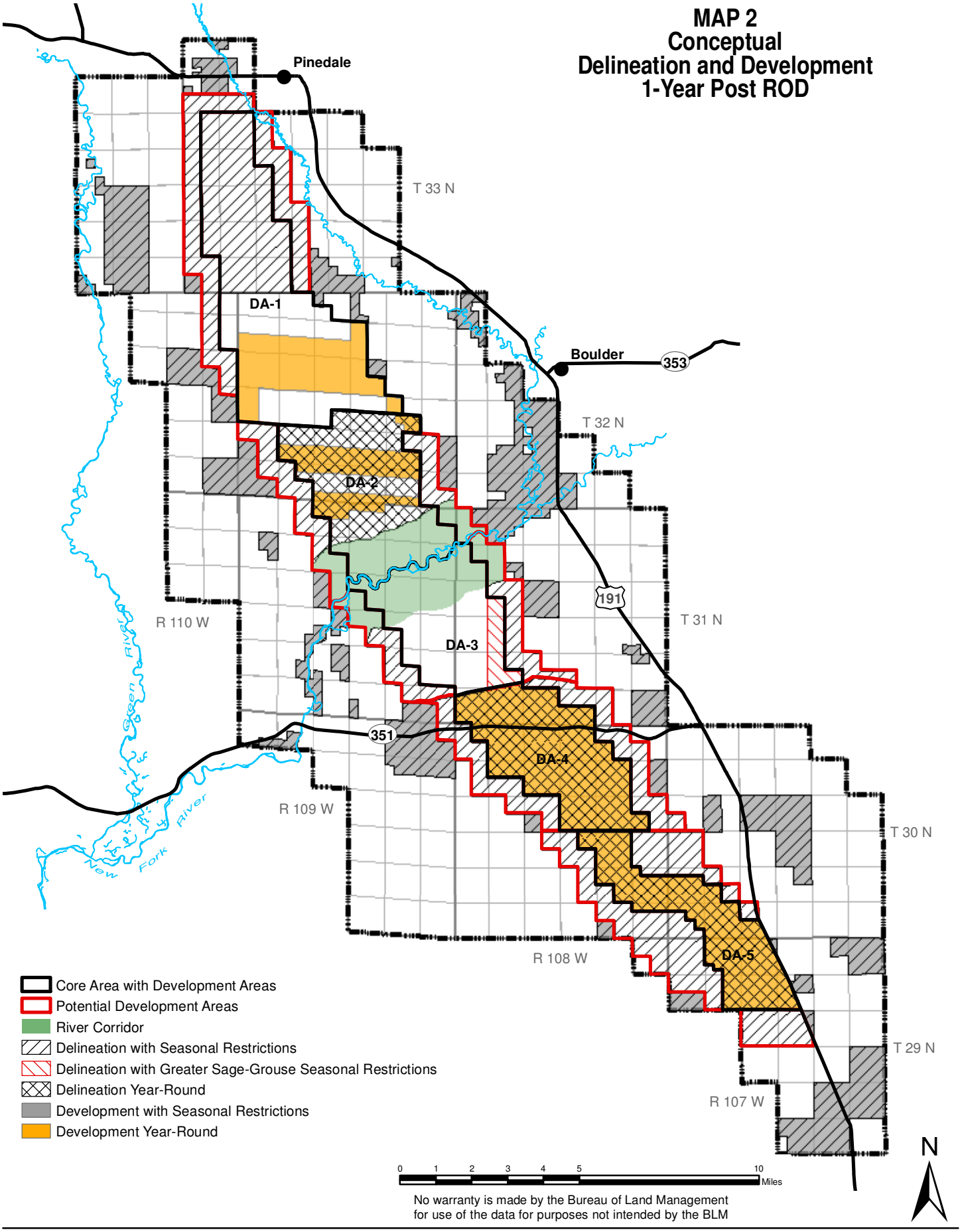
All topsoil from disturbed sites should be salvaged and stockpiled for later use in reclamation. Stockpiled topsoil will be seeded with native perennial grasses or an appropriate cover crop and soil should be reapplied to a reclaimed area while the topsoil is still viable – usually within 2-5 years.

Any mulch used would be reasonably free from mold, fungi, or noxious weed seeds. Mulch may include native hay, small grain straw, wood fiber, live mulch, cotton, jute, biodegradable netting, and rock or otherwise approved media. Straw mulch should contain fibers long enough to facilitate crimping and provide the greatest cover. The grantee or lessee would be responsible for the control of all noxious weed infestations on surface disturbances.

APPENDIX D

Conceptual Depiction of Delineation and Development


MAP 1
Conceptual
Delineation and Development
at the Signing of the ROD
Pinedale
Boulder
353
191
351
T 33 N
T 32 N
T 31 N
T 30 N
T 29 N
R 110 W
R 109 W
R 108 W
R 107 W
DA-1
DA-2
DA-3
DA-4
DA-5
Green River
New Fork River
Core Area with Development Areas
Potential Development Areas
River Corridor
Delineation with Seasonal Restrictions
Delineation with Greater Sage-Grouse Seasonal Restrictions
Delineation Year-Round
Development with Seasonal Restrictions
Development Year-Round
0 1 2 3 4 5 10
Miles
N
No warranty is made by the Bureau of Land Management
for use of the data for purposes not intended by the BLM


MAP 2
Conceptual
Delineation and Development
1-Year Post ROD
Pinedale
Boulder
353
191
351
T 33 N
T 32 N
T 31 N
T 30 N
T 29 N
R 110 W
R 109 W
R 108 W
R 107 W
DA-1
DA-2
DA-3
DA-4
DA-5
Green River
New Fork River
Core Area with Development Areas
Potential Development Areas
River Corridor
Delineation with Seasonal Restrictions
Delineation with Greater Sage-Grouse Seasonal Restrictions
Delineation Year-Round
Development with Seasonal Restrictions
Development Year-Round
0 1 2 3 4 5 10
Miles
N
No warranty is made by the Bureau of Land Management
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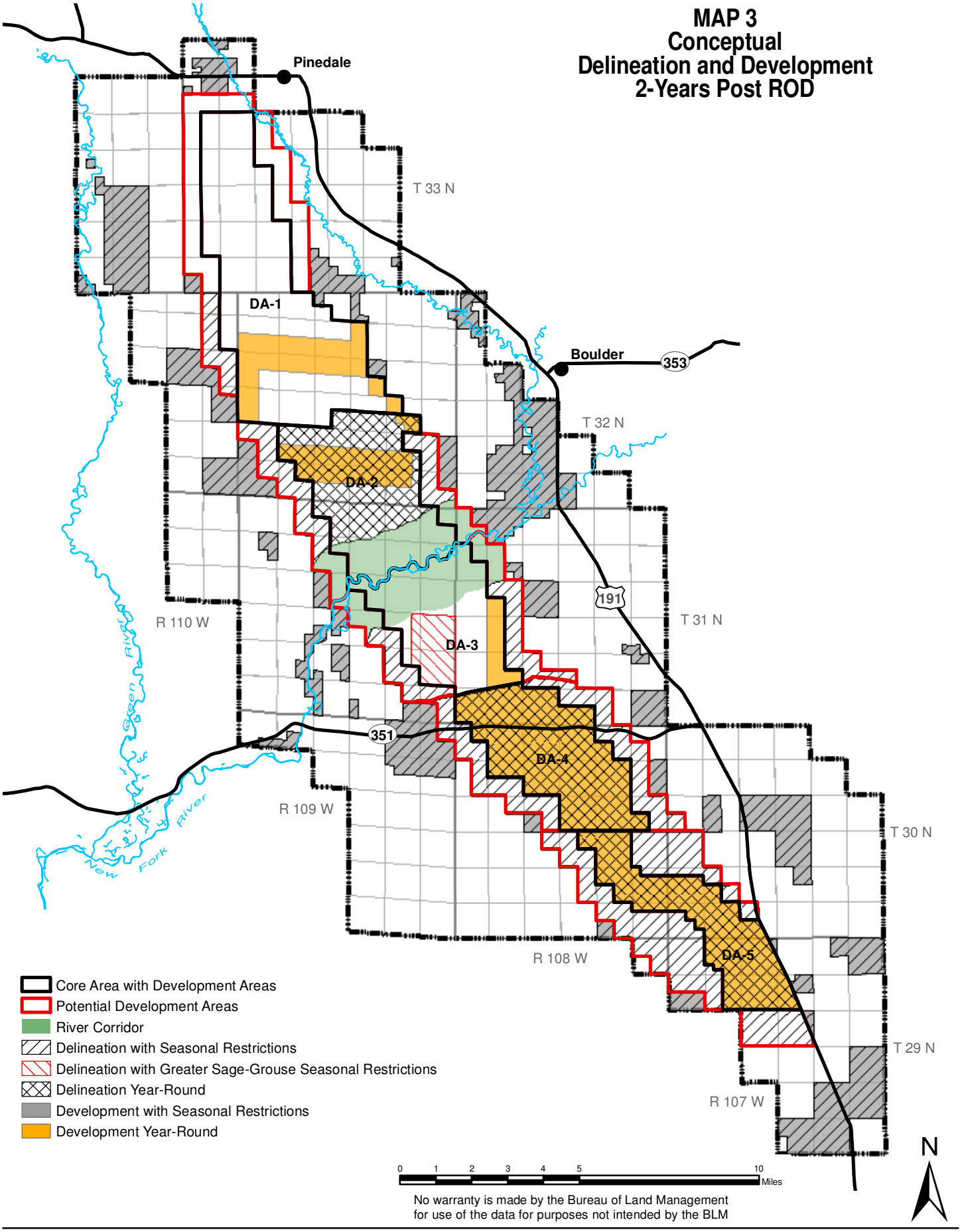
MAP 3
Conceptual
Delineation and Development
2-Years Post ROD
Pinedale
Boulder
353
191
351
T 33 N
T 32 N
T 31 N
T 30 N
T 29 N
R 110 W
R 109 W
R 108 W
R 107 W
DA-1
DA-2
DA-3
DA-4
DA-5
Green River
New Fork River
Core Area with Development Areas
Potential Development Areas
River Corridor
Delineation with Seasonal Restrictions
Delineation with Greater Sage-Grouse Seasonal Restrictions
Delineation Year-Round
Development with Seasonal Restrictions
Development Year-Round
0 1 2 3 4 5 10
Miles
N
No warranty is made by the Bureau of Land Management
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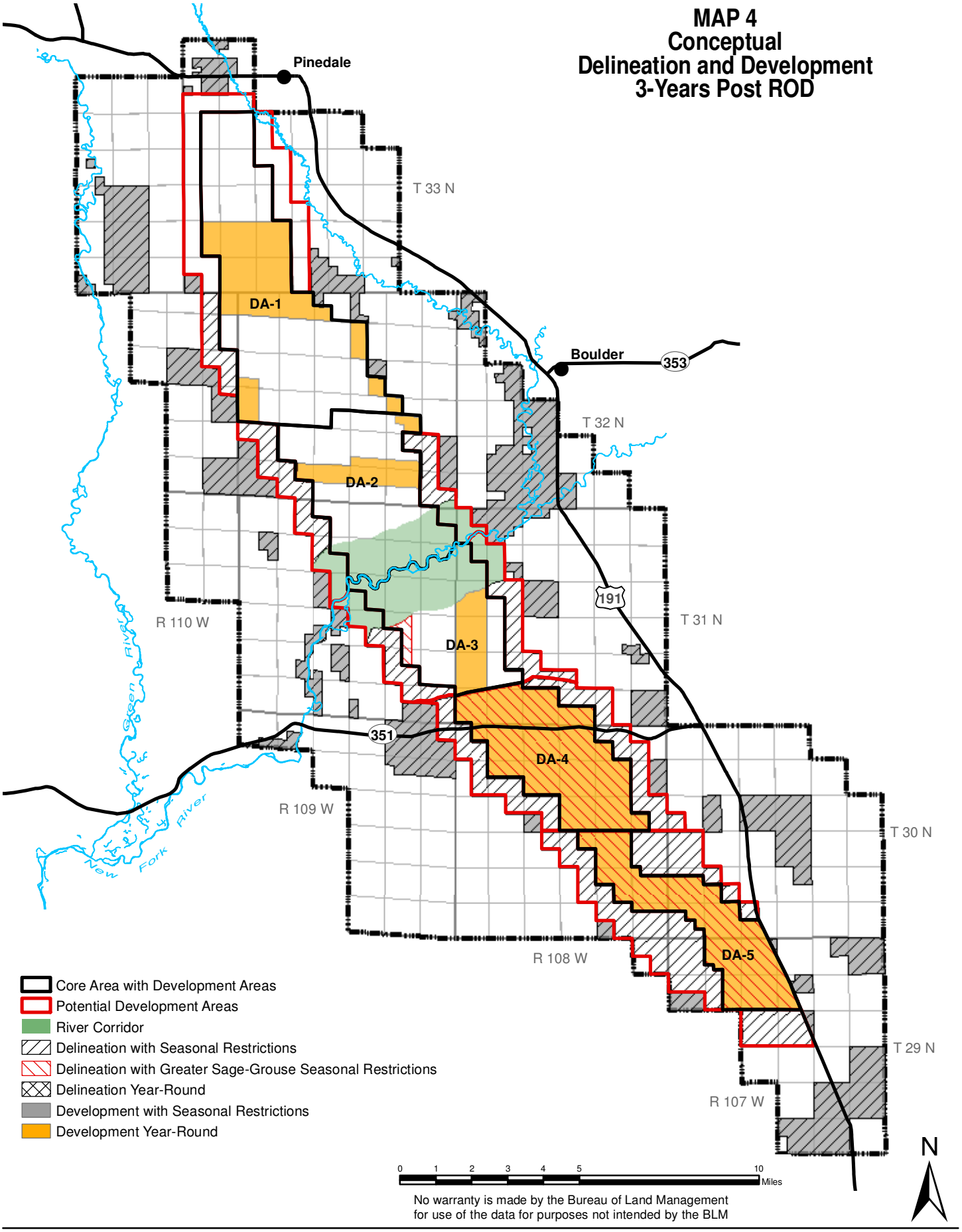
MAP 4
Conceptual
Delineation and Development
3-Years Post ROD
Pinedale
Boulder
353
191
351
T 33 N
T 32 N
T 31 N
T 30 N
T 29 N
R 110 W
R 109 W
R 108 W
R 107 W
DA-1
DA-2
DA-3
DA-4
DA-5
Green River
New Fork River
Core Area with Development Areas
Potential Development Areas
River Corridor
Delineation with Seasonal Restrictions
Delineation with Greater Sage-Grouse Seasonal Restrictions
Delineation Year-Round
Development with Seasonal Restrictions
Development Year-Round
0 1 2 3 4 5 10
Miles
N
No warranty is made by the Bureau of Land Management
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APPENDIX E

Adaptive Management in the PAPA

Adaptive Management in the PAPA

E.1 Introduction

The potential value of adaptive management to the National Environmental Policy Act of 1969 (NEPA) process is strongly supported by a number of agencies at the national level, including U.S. Department of the Interior (DOI), U.S. Environmental Protection Agency (EPA), and the U.S. Department of Agriculture Forest Service (USFS). Adaptive management in the Pinedale Anticline Project Area (PAPA) was first implemented through the Pinedale Anticline Working Group (PAWG).

In addition to the uncertainties about how natural systems will react to human interventions, it has become apparent that the current development as outlined in the 2000 PAPA ROD is not providing adequate protection for some resources. However, national demand makes it imperative that as much natural gas as possible be recovered from the PAPA. Project proponents, along with state and federal agencies, are continually striving to develop and use drilling and production mitigation technologies to lessen the impacts of natural gas recovery. There is uncertainty regarding the short- and long-term effectiveness of these new technologies, as well as uncertainty regarding the effectiveness of the mitigations and management restriction in this ROD. These uncertainties require that a number of assumptions be used to predict the impacts associated with development; those assumptions may or may not be partially or wholly correct, which means the impact analysis may or may not be partially or wholly correct. Also, considering the expected level of impacts associated with the proposed development, a significant off-site mitigation program will be necessary.

Uncertainty regarding the accuracy of the predictive assumptions and models used in the impact analysis and uncertainty regarding how the environment will react to future development in the PAPA using current and future untested development and mitigation technologies and untried restrictions, creates a need for a mechanism through which BLM can make incremental adjustments to field management over time, as information is gained about how resources are reacting to new technologies and/or restrictions. That mechanism is adaptive management.

The adaptive management process allows for changes in the management without further NEPA analysis, unless designated thresholds are reached. The process increases the speed at which managers learn how resources react to their decision and development activities, and thereby increases the speed at which managers can adjust mitigation and management restrictions for unanticipated impacts, or lack thereof. The adaptive management frame-work has several continuous steps: Decision is implemented; impacts are monitored; monitoring data are evaluated; modifications to mitigation or management restrictions are recommended, based on monitoring data; adaptive management decision is made and implemented; impacts are monitored; etc.

The purpose of this adaptive management process is to ensure that impacts of development and production are monitored, the information from that monitoring is evaluated and incorporated, on a regular basis, into future mitigation and management decisions.

E.2 Goals and Objectives

The specific goals and objectives adaptive management for the PAPA are:

- Determine the effects of PAPA development on area resources;
- Determine the effectiveness of the mitigation measures contained in this ROD;
- Suggest modification to mitigation measures to achieve the stated goals/objectives;

- Assure oil and gas related BLM decisions regarding the PAPA are coordinated with non-oil-and-gas-related decisions (such as grazing, recreation, etc.)
- Provide a rapid response to unnecessary and undue environmental degradation, should any occur;
- Validate predictive models used in the SEIS and revised the models/projections as necessary based on field observations and monitoring;

E.3 Implementation Model

BLM will implement and coordinate the adaptive management process. The BLM Pinedale Field Manager will accomplish that through the Pinedale Anticline Project Office (PAPO) as established in this ROD. The PAPO will be staffed by BLM, Wyoming Department of Environmental Quality Air, and Wyoming Game and Fish Department employees.

Details on the PAPO duties and objectives will be developed within 3 months of the signing of this ROD.

E.3.1 PAPO Operating Procedures

It is anticipated the PAPO will be necessary for at least the next 25 years, with funding support provided by the Proponents, Ultra, Shell, and Questar. Other PAPA operators may contribute to the Pinedale Anticline Monitoring and Mitigation Fund. Office oversight will be provided by an Agency Managers Committee consisting of individual agency heads or representatives from BLM, WDEQ, and WGFD. The committee will meet at least once per year to provide senior-level guidance, evaluate past progress, and review staffing levels and future needs.

In accordance with an agreement between the Wildlife Heritage Foundation of Wyoming and the PAPO Charter members, the Pinedale Anticline Monitoring and Mitigation Board will receive and hold all compensatory mitigation funding provided by PAPA operators. The PAPO will maintain an accurate accounting of all compensatory mitigation fund expenditures and provide the Agency Managers Committee an annual financial report.

Specific PAPO operational procedures will be developed by the office staff to meet defined goals and objectives.

Based upon the impacts and assumptions contained in the SEIS, Ultra, Shell and Questar have voluntarily proposed, and the BLM herein approves the creation of the Pinedale Anticline Monitoring and Mitigation Fund to mitigate potential impacts to wildlife, air, and other resources identified in the Final SEIS (BLM, 2008). The total contribution to the fund by Ultra, Shell, and Questar will be $36 million. Ultra, Shell and Questar will each annually contribute $7,500 for each well spudded on their respective leaseholds the previous calendar year. Ultra, Shell and Questar may make advanced contributions to the Fund to implement projects. Such contributions will be credited toward the end of development contributions. Annual contributions are anticipated to be $1.8 million per year with an initial contribution of at least $4.2 million. This Fund will provide the financial support for mitigation and monitoring for the life of the project.